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Foreword

This information paper presents and explores new statistical information relating to household wealth at a small area scale. The paper also explores the relationship between wealth and income for Australia's cities and regions.

This information paper forms part of BITRE's research program, which aims to improve understanding of the economic and social factors affecting Australia's cities and regions. Previous releases have addressed issues relating to industry structure, economic growth, education and skills, social capital and the drivers of economic growth in Tasmania and metropolitan Sydney.

This research project was led by Leanne Johnson, with Shelby Canterford, Yi Yu, Dennis Byles and Carolyn Brennan all making important contributions to the report. Dr Gary Dolman provided executive supervision.

Phil Potterton
Executive Director
Bureau of Infrastructure, Transport and Regional Economics
January 2009

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While BITRE is grateful for the assistance provided by these individuals and organisations, the views expressed in this report are those of BITRE and should not be attributed to any other organisation.

At a glance

- Wealth benefits economic wellbeing through enabling increased consumption opportunities, generating income flows, protecting against financial hardship and providing economic security.
- BITRE has used small area estimation techniques to develop new measures of household wealth for Australia's regions in 2003–04.
- Nationally, household wealth averaged $467 600 in 2003–04 and was higher in the capital cities ($503 600) than in regional areas ($405 100). Sydney has particularly high average wealth ($640 600), while average wealth is especially low for regional Tasmania ($289 200).
- Rural areas have high rates of farm business ownership and above average wealth. Regional service centres were consistently less wealthy than their rural surrounds.
- Average household wealth varies a great deal within Australia, ranging from a low of $154 300 for Mount Morgan in Queensland to a high of $1.93 million for Peppermint Grove in Perth.
- Capital cities dominate the list of the wealthiest regions in Australia, with seven of the ten areas in which average wealth tops $1 million being located within Sydney. The capital cities also contain many of the least wealthy areas, with nine of the ten least wealthy areas being outer suburbs of Adelaide, Brisbane and Darwin.
- Outside of the capital cities, the wealthiest regions are heavily reliant on agriculture. The least wealthy non-metropolitan areas are typically mid-sized towns with a declining industry base.
- The debt-to-asset ratio is highest in Townsville-Thuringowa and the Palmerston area of Darwin, and is also generally high for mining towns and outer suburbs of the capital cities.
- Since 2003–04, regional areas have generally experienced stronger growth in wealth than the capitals. Property values declined in much of Sydney's south and west, but grew rapidly in Queensland's mining areas and around Bunbury in Western Australia.
- Income and wealth are not interchangeable as indicators of regional economic wellbeing and often provide contrasting signals, particularly for regions with a very old or young age profile. Reliance on income data alone understates the wellbeing of many rural and sea change regions and overstates wellbeing for mining regions.
- The newly available information on assets and liabilities in BITRE's *Household Wealth Database* enables more informed analysis of the economic strengths and needs of regions.

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Background

Wealth makes an important contribution to the economic wellbeing of Australian households through generating increased consumption opportunities, income flows and economic security. Wealth also protects against financial stress and poverty.

Until now, information on the wealth of regions has not been freely available. The main contribution of this study is to fill that gap by providing new information on household wealth for Australia's regions.

BITRE has developed these new measures of household wealth by disaggregating the Australian Bureau of Statistics' 2003–04 *Survey of Income and Housing* estimates of wealth to a detailed regional scale using small area estimation techniques and a range of small area data sources (e.g. house price statistics, taxation statistics, census data). Estimates of average household wealth, and its composition, have been produced for 1135 Statistical Local Areas.

In addition to analysing the spatial distribution of household wealth, the study aims to:

- improve understanding of household wealth and its relevance to regional wellbeing
- highlight recent trends in household wealth
- explore the relationship between regional wealth and regional income.

Household wealth in Australia

In 2003–04, average household wealth was $467 600, consisting of $537 100 of assets and $69 400 of liabilities. This reflects an average debt-to-asset ratio of 13 per cent.

For most Australian households, the dwelling in which they live is their main asset, with net owner-occupied property assets contributing 45 per cent of net worth. Superannuation is the most important financial asset held by Australians, with only 7 per cent of assets being held in a liquid form that can readily be turned into cash in a crisis.

Wealth is lowest for households headed by 15 to 24 year olds and increases with age, peaking for the 55 to 64 age group, before declining as households draw on their assets in retirement.

Wealth is unequally distributed across Australian households, and this is particularly true for shares and business assets. The wealthiest 20 per cent of households own 59 per cent of total household wealth, while the least wealthy 20 per cent own just 1 per cent.

Spatial dimensions of household wealth

There is considerable spatial variation in household wealth, and its components—particularly in the value of owner-occupied property assets, business assets and shares.

Region type

Average household wealth is much higher in the capital cities ($503 600) than in the rest of Australia ($405 100). For *individual capital cities* and *state balances*, average household wealth was greatest for Sydney ($640 600) and lowest for regional Tasmania ($289 200). Within each state, the average value of net property assets is higher in the capital city than in the rest of the state. However, business assets tend to be much more important in regional areas. Wealth is distributed relatively unequally across households in regional WA and the NT.

At the *remoteness class scale*,[1] average net worth is greatest in the *major cities* ($496 500) and lowest for *outer regional Australia* ($363 900). *Outer regional* and *remote* areas have low net worth combined with a relatively unequal distribution of wealth across households.

The *section of state classification*[1] provides a different perspective, revealing that average net worth is higher in *rural Australia* ($591 600), than in *major urban* areas ($491 600). Rural households have a very distinctive wealth profile characterised by high rates of farm business ownership. Small urban centres of between 1000 and 100 000 population have the lowest average wealth ($337 600), due to the low value of property and business assets.

Small areas

Net worth per household

Average household wealth shows a great deal of variation within Australia, ranging from a low of $154 300 for Mount Morgan shire in Queensland to a high of $1.93 million for Peppermint Grove in Perth. Sixty-five per cent of the regional wealth estimates lie below the national average of $467 600 per household.

Capital cities dominate the list of the wealthiest regions in Australia, with seven of the ten areas in which average wealth tops $1 million being located within Sydney (see Table 1). The capital cities also contain some of the least wealthy areas, with nine of the ten least wealthy areas being outer suburbs of Adelaide, Brisbane or Darwin.

Outside of the capital cities, the most wealthy regions were heavily reliant on agriculture. Clusters of high wealth regions are located in Western Australia's wheatbelt, South Australia's Eyre and Yorke peninsulas, western Victoria and the New South Wales Riverina. Gold Coast canal suburbs and some other coastal regions (e.g. Kiama, Queenscliffe, Surf Coast West) also perform strongly in terms of wealth.

1. A description of this regional classification is provided in Chapter 5.

The non-metropolitan areas with the lowest wealth are typically mid-sized towns, often with a declining industry base (e.g. Whyalla, Mount Morgan, Moe, Broken Hill). Regional service centres tend to have lower net worth than their rural surrounds, even when business assets are removed from the equation. Net worth per household was consistently low in mining communities and throughout regional Tasmania.

Table 1 Average household wealth, top and bottom 10 regions, 2003–04

Highest wealth	*$ thousands*	*Lowest wealth*	*$ thousands*
Peppermint Grove WA	1 926.8	Mount Morgan QLD	154.3
Hunter's Hill NSW	1 530.1	Playford West Central SA	157.2
Woollahra NSW	1 388.4	Elizabeth SA	157.7
Mosman NSW	1 386.5	Woodridge QLD	160.1
Ku-ring-gai NSW	1 370.1	Kingston QLD	175.6
Bayside: Brighton VIC	1 187.2	Wacol QLD	179.7
Pittwater NSW	1 178.0	Inala QLD	193.6
Manly NSW	1 024.6	Marsden QLD	196.2
Nedlands WA	1 021.8	Palmerston Balance NT	198.3
Willoughby NSW	1 000.6	Moulden NT	201.1

Notes: Based on estimates for Australian Statistical Local Areas (SLAs). Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE's *Household Wealth Database*.

Composition of the wealth portfolio

The composition of a region's wealth portfolio depends on the average wealth of that region. Dwelling contents and superannuation represent a large part of wealth in the least wealthy areas, but are relatively unimportant in the wealthiest areas. The wealthiest regions hold a disproportionate amount of share and trust assets.

For most regions, the composition of the wealth portfolio is broadly similar to the national portolio, with owner-occupied property assets being the single most important asset in 82 per cent of regions. However, business assets were the major asset category for 16 per cent of regions and investment properties were dominant for a small number of mining communities and inner city suburbs.

The places with the highest average debt are outer suburbs and commuting settlements of Australia's capital cities. Baulkham Hills in Sydney has the highest average debt ($146 800), but this is coupled with substantial asset holdings. The debt-to-asset ratio is highest in the larger cities of northern Australia, particularly the Palmerston area of Darwin and Townsville-Thuringowa. Mining towns and outer suburbs of the capital cities also tend to have high debt-to-asset ratios.

Changes in wealth

Nominal wealth has grown at an average rate of 10.6 per cent per annum since 1960. The 2001 to 2005 period has been a period of strong and sustained growth in wealth, with record growth achieved in the year ended June 2004.

The wealth components which grew most rapidly between 1992 and 2005 were land, superannuation, equities and loans. Growth in liabilities outpaced growth in

household assets, reflecting a rise in the indebtedeness and repayment obligations of Australian households. Despite substantial changes in the composition of the wealth portfolio, wealth inequality has remained basically unchanged over the last two decades.

While this paper focuses on providing a snapshot of household wealth for 2003–04, it also outlines the main changes that occurred between 2003–04 and 2005–06:

- Liabilities continued to grow more rapidly than assets.
- Net business assets grew particularly strongly.
- Regional areas experienced higher growth in wealth than the capital cities, for all states other than Western Australia.
- Growth in wealth was lowest for Sydney (9 per cent) and highest for regional South Australia (58 per cent), Perth (36 per cent) and regional Western Australia (35 per cent).
- Property values declined in much of Sydney's south and west, but rose rapidly in Queensland's mining areas and around Bunbury in Western Australia.

Information on these recent changes in wealth should provide some indication of the extent to which the 2003–04 small area estimates continue to present an accurate picture of a region's wealth holdings. BITRE will consider feedback from users in deciding whether to update these small area estimates of household wealth.

Wealth and income

Wealth and income are partially dependent on one another, and are positively correlated for individuals and regions. However, much of the strength of the association between regional wealth and regional income derives from their strong connection for the wealthiest parts of the capital cities. When the top wealth decile is excluded, the regional relationship between income and wealth is weak. For non-metropolitan Australia, regional wealth and regional income have little connection.

Income and wealth are not interchangeable as indicators of regional economic wellbeing, and often provide contrasting signals. The income and wealth rankings differ by more than 500 places for one fifth of regions. Wealth and income data tend to provide contrasting messages for regions which have a particularly young or old age structure. Many rural and sea change regions are relatively disadvantaged in terms of income, but the wealth data often suggest that substantial wealth holdings can be used to support consumption and maintain lifestyle. At the opposite end of the spectrum, reliance on income data alone is likely to overstate the economic wellbeing of mining communities, which typically perform much better in terms of income than in terms of wealth.

Wealth varies more widely across regions than income does. Thus, reliance on regional income data alone may understate the extent of regional disparities in economic wellbeing.

When used in conjunction with BITRE's *Taxable Income Database*, the new wealth information enables a more comprehensive and informed assessment of a region's comparative economic wellbeing which reflects both income and wealth.

Wealth and economic wellbeing

Economic wellbeing is a multidimensional concept—income, wealth, consumption, economic security, the cost of living, poverty and inequality are key elements.

Low average wealth may not signal low regional wellbeing and may not in itself be cause for concern. It may simply reflect a particularly small average household size or a particularly youthful population. Thus, it is important to know not only whether a region has high or low wealth, but also the principal factors underlying that result. This study links the wealth estimates with information on household size and age to provide a more informative picture of spatial differences in wealth. While adjusting for household size had only a minor impact on regional wealth rankings, differences in the age structure of regional populations proved to be a very important driver of regional wealth differences.

Households that have substantial wealth holdings can use their assets to boost consumption, either by running down cash reserves, selling assets or using assets as collateral to borrow funds. Studies have shown that both housing and financial wealth have positive and significant effects on consumption in Australia, with between two and six cents of every extra dollar of household wealth being consumed. The wealth effect is most apparent for low income households, with many able to support higher levels of consumption by drawing on their wealth. The large capital gains on housing in the early 2000s appear to have boosted consumption growth between 2003 and 2005, at least in part through increased withdrawal of housing equity.

Wealth also provides economic security, enabling adequate living standards to be maintained when income is reduced due to retirement, unemployment, poor health or other shocks. The literature provides evidence that people accumulate wealth to self-insure against future health risk, income uncertainty and job loss. Wealth also helps to alleviate the financial burdens of illness and drought, with the aftermath of such shocks typically involving wealth depletion and shifts in portfolio composition.

Furthermore, wealth serves to protect households from financial stress, poverty and disadvantage. People's subjective judgements of whether they are poor give greater weight to wealth than to income. High wealth regions generally have low levels of disadvantage, and this regional relationship between wealth and disadvantage is much stronger and more consistent than the regional relationship between wealth and income.

Household Wealth Database

This information paper is accompanied by BITRE's *Household Wealth Database*, which includes the detailed regional estimates of household wealth and its components and is available at <www.bitre.gov.au>. The paper includes regional case studies of

Augusta-Margaret River, Gladstone and Tasmania (see Chapter 11), which illustrate how the database can be used to profile a region's wealth and wellbeing or to help understand processes of regional economic growth.

Chapter 1 Introduction

Wealth is a key element of the economic wellbeing of individuals, regions and nations, and is central to economic progress. This study develops and analyses new measures of household wealth for Australia's regions. The availability of information on regional wealth will enable a more comprehensive assessment of the economic wellbeing of Australia's regions, providing a better basis for regional policy.

What is household wealth?

Household wealth is defined as the net worth of the household, which equates to the value of household assets minus the value of household liabilities. This definition is one which is agreed upon by a variety of sources (e.g. Podder and Kakwani 1973, ABS 1995) and one which is also used in this study. The terms 'household wealth' and 'net worth' are used interchangeably throughout this paper.

Some broader definitions of wealth, such as the concept of inclusive wealth developed by Arrow, Dasgupta and Maler (2003), include human, social and natural capital. However, these elements lie beyond the scope of the present study which is focused on financial and physical assets and liabilities which are owned by households and can be readily valued in monetary terms.

While there is a consensus about the basic definition of household wealth, there are differences across studies in the types of assets and liabilities which are included in its measurement. Since the Australian Bureau of Statistics' (ABS) *Survey of Income and Housing* (SIH) for 2003–04 is the primary data source for this study, the scope of the Bureau of Infrastructure, Transport and Regional Economics' (BITRE) measure of household wealth is determined by the scope and definitions adopted within the SIH. Table 1.1 provides an overview of the types of assets and liabilities included within the SIH measure of household wealth.

Why measure household wealth?

The ABS (2006a, p. 18) considers national wealth to be central to economic progress:

> 'Economic progress equates to enhancing the nation's income (broadly Australians' real per capita levels of consumption) while at least maintaining (or possibly enhancing) the national wealth that will support future consumption.'

This definition of economic progress gives prominence to the capacity of wealth to generate future income and support future consumption. Both wealth and income can be used as a source of funds to purchase goods and services. Income can be used to purchase goods and services directly, while wealth holdings can be liquidated or used as collateral to borrow funds.

Table 1.1 List of household assets and liabilities in the ABS *Survey of Income and Housing*, 2003–04

Broad category	*Components*
Financial assets	Accounts held with financial institutions Shares Trusts Debentures and bonds Superannuation Own incorporated businesses (net of liabilities) Other financial assets (includes children's assets and loans to persons outside household)
Non-financial assets	Owner-occupied dwellings Other property assets Own unincorporated businesses (net of liabilities) Vehicles Dwelling contents Assets not elsewhere classified
Liabilities	Loans on owner-occupied dwellings Loans on other property Credit card debts Debt outstanding on study loans Loans for vehicle purchases (excluding business loans) Investment loans (excluding business and rental property loans) Loans for other purposes (excluding business and investment loans)

Source: ABS Cat. 6554.0

This link between wealth and consumption has been evident in recent years as above trend growth in household wealth, arising in part from large capital gains on housing assets, has made a significant contribution to growth in consumer spending (Tan and Voss 2003, ABS 2002, Dvornak and Kohler 2007, The Treasury 2005).

Wealth also makes a direct contribution to wellbeing. For example, shares and investment property generate monetary returns in the form of dividends or rental income, while owner-occupied housing provides in-kind benefits in the form of shelter, security, privacy and comfort.

Furthermore, wealth provides economic security, enabling adequate living standards to be maintained when income is reduced due to planned or unforeseen events (e.g. retirement, unemployment, poor health). At the scale of a regional economy, wealth can help to insulate communities from the effects of fluctuations in household income (DOTARS 2005). Wealth also represents a pool of savings available to capitalise new and existing businesses and increase economic activity (Federal Reserve Bank of Kansas City 2005b).

Income alone may not provide an adequate picture of a household's standard of living. Low income households that have significant wealth holdings can use these assets to support a higher standard of living, either through the in-kind and monetary returns referred to above, through the liquidation of assets or through increased borrowing. Similarly, some low income regions may have significant wealth holdings which enable residents to enjoy a relatively high standard of living. Sorensen (2004, p. 2) notes that:

> '[I]ncome data may be flawed as an indicator of well-being because they measure only cash flows and not stores of wealth. Such stores can be extremely important for the quality of life of some people, notably retirees and those whose incomes are unstable, including farmers and small business people.'

Retirees and farmers are spatially concentrated in certain areas, suggesting that wealth may be a particularly important source of economic wellbeing in coastal retirement destinations and agriculturally based regions.

Wealth has been shown to be a significant positive predictor of life satisfaction and mental health, and a significant negative predictor of financial stress (Headey and Wooden 2003). It is also closely associated with the quality of housing, and housing conditions in turn are associated with health, financial status, crime levels and social cohesion (ABS 2004a). Because of these links, and the capacity of wealth information to contribute to a more complete picture of economic wellbeing, the wealth holdings of households are an important topic for investigation.

Until now, detailed information on the extent to which regional residents share in Australia's wealth has not been available. This study aims to fill that gap by developing new measures of household wealth for Australia's regions. This will enable more informed analysis of the economic strengths and needs of regions, providing a better basis for decisions.

This study also investigates the relationship between regional income and regional wealth, to determine whether income information in itself provides an adequate picture of regional economic wellbeing, or whether household wealth data can provide different signals about regional economic wellbeing in certain situations.

More generally, the level, composition and distribution of household wealth are important factors in determining the impact of changes to government policy on the living standards of the Australian population. Therefore, the availability of information on regional wealth will enable more informed assessments of the regional impacts of changes to government policy. The data will have particular relevance to assessing the regional impacts of policies which impact upon the major components of household wealth—superannuation, housing assets and mortgages.

Which measures?

A measure of average household wealth for a region can provide useful insight into spatial differences in economic wellbeing and living standards, particularly when complemented with measures of regional income, such as those available from BITRE's *Taxable Income Database*.

Given that some assets are more easily liquidated than others, information about the composition of assets is also relevant. Headey, Marks and Wooden (2005) have expressed concern that the majority of household wealth is tied up in assets which are not easily liquidated such as housing and superannuation. The composition of household wealth is also a determinant of the level of risk borne by households, and their exposure to external economic influences, such as shifts in interest rates and share price movements.

A high level of average wealth in a region can mask considerable variation. It is not unusual for wealth to be highly concentrated within a relatively small number of households, which may make regional averages unrepresentative of the financial situation of the bulk of the population. Wealth is also very dependent on household characteristics, such as age, marital status and education (Headey, Marks and

Wooden 2005). Ideally, information on average household wealth in a region would be complemented by information on the distribution of wealth across different types of households within that region.

Approach

The primary objective of this study is to develop and analyse new measures of average household wealth for Australia's regions.

National information on average household wealth, the distribution of wealth, its components and its relationship to household characteristics is available from the ABS SIH for 2003–04 (ABS 2006b). The SIH also provides estimates of household wealth, and its composition and distribution, for fourteen aggregate regions (i.e. the two Territories, the six remaining capital cities and the six state balances).

BITRE has disaggregated the SIH wealth estimates to a detailed regional scale using a range of small area data sources, including Valuer Generals' data on house sales price, ABS' *Census of Population and Housing* data and the Australian Taxation Office's (ATO) *Taxation Statistics*. Small area estimation techniques have been used to integrate these small area data sources with the SIH benchmark data.

Estimates of average household wealth, and its composition, have been produced and analysed for 1135 Australian Statistical Local Areas (SLAs). These estimates are available in BITRE's *Household Wealth Database* at <www.bitre.gov.au>, which should prove to be a useful tool for those wishing to understand the economic wellbeing of Australia's regions.

Other objectives of this study are to:

- improve understanding of household wealth and its relevance to regional wellbeing
- highlight recent trends in household wealth
- explore the relationship between regional wealth and regional income, with a view to identifying whether income, in itself, provides an adequate guide to regional economic wellbeing, or whether it needs to be complemented with information on regional wealth.

Structure of paper

Chapter 2 provides an introduction to the household wealth literature, focusing on the findings of most relevance to the present study. Chapter 3 details the methodology used by BITRE to develop the small area estimates of household wealth. It provides information on small area estimation techniques, the underlying data sources, the geographic unit of analysis and the quality of the small area estimates.

Chapter 4 draws on the ABS' 2003–04 SIH to provide an overview of household wealth in Australia, while Chapter 5 uses the same source to explore how wealth

varies across states and territories, remoteness classes, urban centre size categories, capital cities and state balances.

The two following chapters analyse BITRE's small area estimates of household wealth in some depth. While Chapter 6 is focused on spatial differences in net worth per household, Chapter 7 examines the composition of wealth and a range of different wealth components (e.g. debt, superannuation, business assets).

Although this paper is focused on providing a snapshot of household wealth for 2003–04, there have been some important shifts in wealth between 2003–04 and 2005–06. These changes are discussed in Chapter 8.

Chapters 9, 10 and 11 all link BITRE's small area estimates of household wealth with other sources of information. Chapter 9 links the wealth data with information on household size and age to provide a more informative picture of wealth differences across Australia's regions. Chapter 10 explores the relationship between wealth and income at both the household and regional scale. It also presents evidence on wealth's linkages with consumption, economic security and disadvantage. Chapter 11 describes the contents of BITRE's *Household Wealth Database* and presents three regional case studies which make use of the wealth estimates. Finally, Chapter 12 makes some concluding remarks.

Summary

Until recently, relatively little was known about household wealth, even at the national scale. However, the release of household wealth data from the *Household, Income and Labour Dynamics in Australia* (HILDA) Survey and the ABS' SIH have led to a much improved understanding of household wealth in Australia, and its relationship to income and the demographic characteristics of households. Nevertheless, very little is known about the spatial distribution of household wealth in Australia. The main contribution of this study is to fill that gap by providing new information on household wealth for Australia's regions.

Household Wealth is a largely quantitative study, which aims to improve understanding of this important dimension of regional and household economic wellbeing. In particular, the project is intended to complement BITRE's *Taxable Income* information paper and database—together the two can provide a more comprehensive picture of regional economic wellbeing which reflects both income and wealth.

Chapter 2 Previous studies

This chapter provides an introduction to the household wealth literature, focusing on the findings of most relevance to the present study.

The chapter begins with a discussion of recent wealth trends for Australia and a summary of how household wealth in Australia compares to that of other developed countries. This is followed by a review of the evidence about the composition of wealth, the distribution of wealth, and the social and demographic characteristics which are most closely tied to wealth. Evidence about the links between wealth, income, consumption and other aspects of economic wellbeing is then briefly discussed. The chapter concludes with a more detailed review of studies which investigate spatial differences in wealth.

Historical trends

There are two main Australian sources of time series data on wealth, both of which extend beyond the household sector:

- ABS' National Accounts publishes an annual balance sheet for the household and non-profit institutions sector (ABS 2006d).
- The Treasury's estimates of Australian net private sector wealth represent a consolidation of the private household and business sectors (The Treasury 2006).

Figure 2.1 illustrates these two wealth time series, which are both presented in nominal terms. Growth in nominal wealth has been quite rapid, averaging 10.6 per cent per annum between June 1960 and June 2005. While both series show strong growth between 1992 and 2005, The Treasury series displays higher average annual growth (10.4 per cent) than the ABS series (8.1 per cent). Both series indicate that the 2001 to 2005 period has been a period of sustained and strong growth in wealth, with record growth achieved in the year to June 2004. Between 2001 and 2005, annual growth rates ranged from 12–21 per cent according to The Treasury and from 7–15 per cent according to the ABS. Due to its narrower scope (i.e. its exclusion of the business sector), the ABS series is likely to provide a better indication of trends in household wealth.

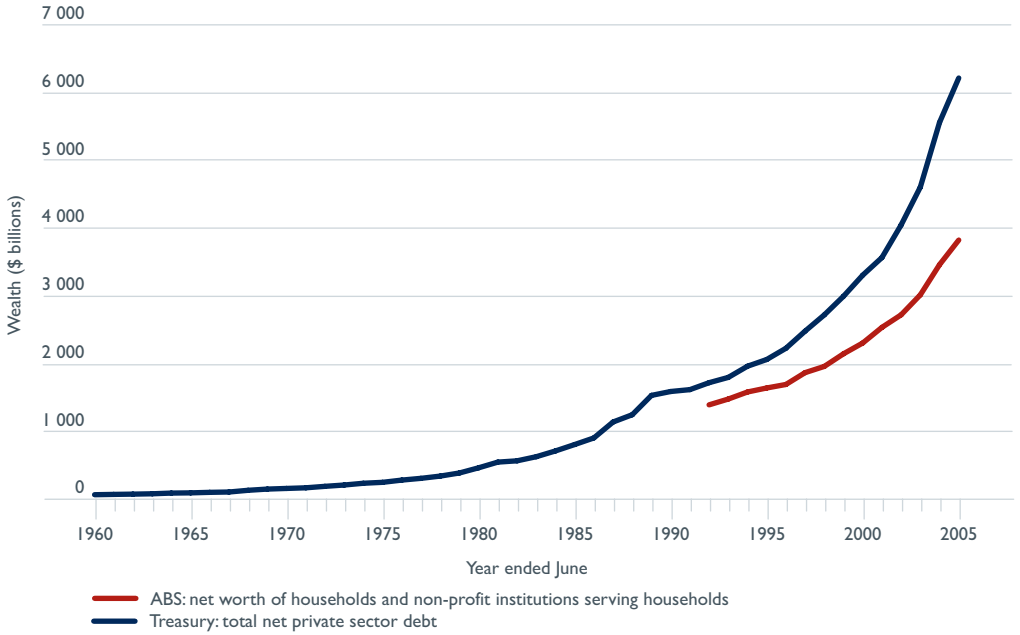
ABS (2006d) reports that the wealth components showing strongest growth between 1992 and 2005 were loans and placements (average annual growth of 12.5 per cent), shares and other equity (13.0 per cent), land (10.5 per cent) and insurance technical reserves (10.5 per cent). The only component to decline over the period was securities other than shares, which fell by 2.1 per cent. Liabilities grew at an annual average rate of 12.2 per cent over the period, while assets grew more slowly (8.7 per cent).

According to ABS (2006d), the main source of the very rapid growth in net worth between 2001 and 2005 was the near doubling of the value of land owned by Australian

households. The rate of growth in dwelling assets was roughly half the rate of growth in the value of land during this period (ABS 2006d).

In real terms, The Treasury (2006) estimates that the market value of private sector net wealth has grown at an average annual rate of 8.3 per cent since 1992, and this growth is considerably higher than the long-run growth rate between 1960 and 2005 of 4.9 per cent.

Figure 2.1 Time series measures of wealth, Australia, 1960–2005



Sources: The Treasury (2006), ABS Cat. 5204.0 (2004–05).

ABS (2002) produced estimates spanning the period from 1994 to 2000, and found that nominal household wealth had increased at an annual average rate of 6.4 per cent over the period. Superannuation was the fastest growing component, while liabilities grew more rapidly than assets. According to Belkar, Cockerell and Edwards (2007, p. 1), in 'the past decade or so there has been a substantial rise in the indebtedness and debt-servicing obligations of Australian households'. Kelly (2001) found that the relative importance of housing mortgages grew considerably between 1986 and 1998, although mortgage growth was outpaced by growth in shares and superannuation. This is supported by Headey, Warren and Wooden (2008) who note that while property still dominates the asset portfolios of Australian households, financial assets such as superannuation and equities have increased their contribution in recent years.

An important trend over the last two decades has been the increasing amounts of wealth being amassed by retirees. Harding, King and Kelly (2002) report that the share of wealth held by Australians aged 65 and over rose from 17 per cent to 27 per cent between 1986 and 1997. Kelly (2002) speculates that the share of net worth held by households with reference persons aged 65 and over could reach 47 per cent of total household wealth in 2030.

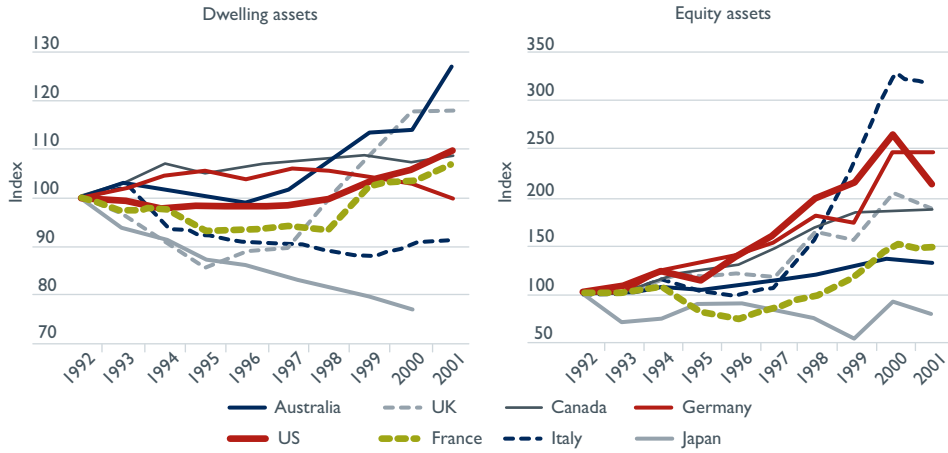
Recent changes in household wealth are discussed in Chapter 8.

International comparisons

Rates of growth in Australian net household wealth between 1991 and 2001 compare favourably to the G-7 nations (The Treasury 2003). Dwelling assets contributed more to net household wealth growth in Australia than any of the G-7 countries, reflecting substantial house price growth and the large share of Australian wealth held in dwellings (The Treasury 2003).

Price movements for housing and equities varied widely across the G-7 countries. Figure 2.2 shows the extremely strong growth in house prices recorded by Australia, and the relatively low growth in Australian equity prices over the decade.

Figure 2.2 International comparison of prices of dwelling and equity assets, 1992 to 2001



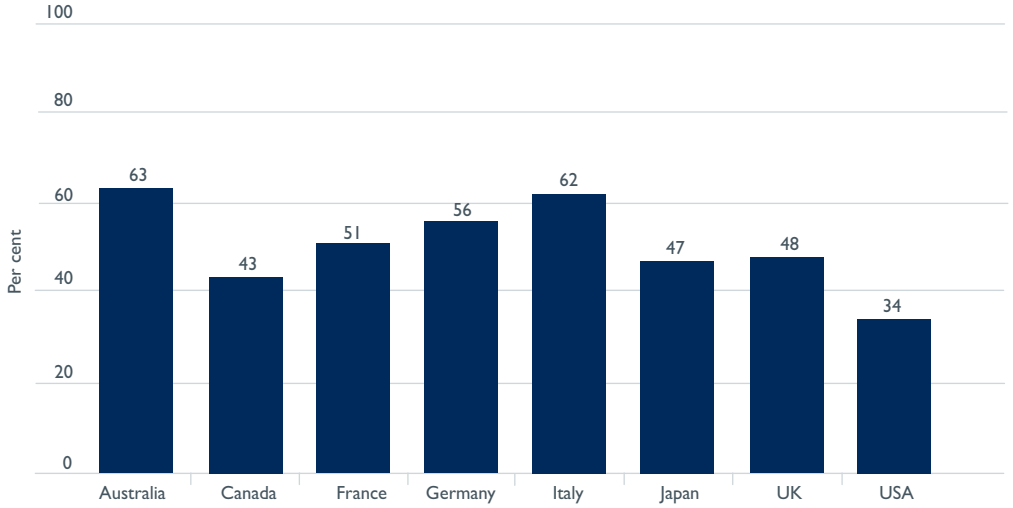
Source: Reproduced from The Treasury (2003).

In Australia, household net wealth was roughly six times the value of disposable income in 1999. The ratio was considerably lower than six for New Zealand, Italy, France and Canada. The United States (US), Germany and Japan all had a similar ratio to Australia, while the United Kingdom (UK) had a somewhat higher wealth to income ratio (Claus and Scobie 2001).

The Treasury (2003) reports that a greater share of Australian assets are held in the form of dwelling assets in comparison to the G-7 nations (see Figure 2.3). This is partly due to the relatively high rates of owner occupation in Australia, particularly in comparison to European countries such as Denmark, France and Germany (Catte, Girouard, Price and André 2004a). A further contributor may be the concentration of Australia's population in the largest cities, where house prices tend to be highest (Ellis and Andrews 2001). In comparison to other countries, housing is expensive relative to income in Australia (Ellis and Andrews 2001).

Between 1987 and 1999, housing asset growth led to the non-financial assets share rising by almost 10 percentage points in Australia, despite most other countries experiencing a falling or stable share (Ellis and Andrews 2001).

Figure 2.3 International comparison of share of dwelling assets in total assets



Source: Reproduced from The Treasury (2003).

Kohler and Rossiter (2005) report that 17 per cent of Australian households own residential property which is not their main home, and that this is a much higher proportion than observed in Canada, the US or the UK.

Ellis and Andrews (2001) find that the financial assets of Australian households are not significantly lower than other developed countries. According to Connolly and Kohler (2004), the ratio of household superannuation assets to Gross Domestic Product (GDP) was 70 per cent for Australia, compared to 85 per cent for the US and 127 per cent for the UK, as of December 2002. Of the three countries, only Australia has a compulsory superannuation scheme, but all three have experienced very strong growth in superannuation over the previous 20 years.

During the 1990s, equities gained an increasing share of the household wealth portfolio in Australia, a trend which was also evident in the US, Germany, Canada and the UK (Claus and Scobie 2001).

According to the Reserve Bank of Australia (RBA 2003), the ratio of debt-to-disposable income for Australian households has risen from a level in the 1980s that was low by international standards to the upper end of the range for comparable countries by 2002. The ratio of debts-to-assets has risen for Australia, but remains low by international standards.

A detailed study of the net worth of New Zealanders (Statistics New Zealand 2002) found that the most commonly held assets were bank deposits, motor vehicles and property and the most common debt was credit card debt. These findings are broadly comparable to Australia, except that superannuation ownership is much more common in Australia than in New Zealand.

With regard to the distribution of wealth, Headey, Marks and Wooden (2005) find that the top 10 per cent of Australian households own 45 per cent of household wealth. A comparison to data from the *Luxembourg Wealth Study* by Sierminska, Brandolini and Smeeding (2006) finds similar results for Italy (42 per cent), Canada (43 per cent) and

Finland (45 per cent), but wealth appears to be much more concentrated in Sweden (58 per cent) and the US (72 per cent). Similarly, Kohler, Connolly and Smith (2004) report that the US has considerably greater wealth inequality than Australia—the 80th percentile owns approximately 50 times more wealth than the 20th percentile in the US, while the equivalent ratio is 20 for Australia.

Composition of household wealth

According to the ABS' 2003–04 SIH, the average Australian household has wealth of $467 700,[2] comprising assets of $537 100 and liabilities of $69 400 (ABS 2006b). This section provides an overview of the evidence from previous Australian studies about the major components of household wealth, while a more detailed analysis of the composition of the 2003–04 SIH wealth portfolio is presented in Chapter 4.

Previous Australian studies have consistently found that property assets are the single largest component of the wealth portfolio (e.g. ABS 2002, RBA 2004, The Treasury 2006, Baekgaard 1998, Dilnot 1990). Roughly 70 per cent of Australian households own their home, either outright or with a mortgage, and for most of these households, the dwelling in which they live is their main asset. While owner-occupied dwellings account for the great majority of property assets, a significant proportion of households report owning residential property assets other than the home in which they live, such as a holiday home or investment property (Kohler and Rossiter 2005, RBA 2004).

Previous studies also consistently find that the second largest contributor to household net worth is superannuation (e.g. RBA 2004, ABS 2006b, Kelly 2001, Baekgaard 1998). Superannuation has become more widely held over the last 15 years (Headey, Warren and Harding 2006a, Kelly 2001).

Financial assets account for less than one-third of all assets (ABS 2006b, Headey, Marks and Wooden 2005). Since the most important financial asset is superannuation, which can not be accessed until retirement, the majority of Australian households lack liquidity (Headey, Marks and Wooden 2005).

Other significant contributors to household wealth include businesses and farms, dwelling contents and share and trust assets. Bank accounts and vehicles are of lesser importance, each accounting for less than 5 per cent of assets (ABS 2006b, Headey, Warren and Harding 2006a).

Previous studies had concluded that the debt of Australian households is rising relative to income (RBA 2003, La Cava and Simon 2005). Property debts account for the great majority of liabilities (Kelly, Cassells and Harding 2004, RBA 2003) and roughly half of home owners had an outstanding loan on their main residence (RBA 2004). However, about one-third of all households had no debt at all (RBA 2004).

The great majority of households hold wealth in the form of bank accounts, vehicles, superannuation and property. In contrast, a relatively small proportion of households hold wealth in the form of businesses or trusts. On the liabilities side, Higher Education Contribution Scheme (HECS) debt is relatively uncommon, while a much

2. Average household wealth does not sum due to rounding.

higher proportion of households have credit card debt or property debt (Headey, Warren and Harding 2006a).

Distribution of household wealth

A number of studies have investigated the degree of wealth inequality in Australia. Reviewing previous work, Headey, Marks and Wooden (2005) conclude that the distribution of wealth in Australia is very unequal, with the richest 10 per cent of households owning close to 45 per cent of wealth. The bottom half of Australian households own less than 10 per cent of wealth (Headey, Warren and Harding 2006a, Baekgaard 1998).

Table 2.1 compares two indicators of wealth concentration across several studies, covering the period from 1986 to 2005–06. The HILDA survey estimates very closely resemble the estimates provided by Baekgaard (1998) for 1986 and 1993, Kelly (2001) for 1998, ABS (2002) and the two more recent SIH estimates. The estimates from Dilnot (1990) present a more unequal picture of the wealth distribution. The available data suggests that the level of wealth inequality has not changed markedly since 1986. Similarly, Kelly (2001) found no significant change in the distribution of wealth for the 1986 to 1998 period.

Table 2.1 Comparing measures of wealth concentration across studies, Australia, 1986 to 2003–04

Study	*Year*	*Share of wealth held by top 10 per cent of households (per cent)*	*Share of wealth held by top 20 per cent of households (per cent)*
Dilnot (1990)	1986	55	72
Baekgaard (1998)	1986	44	63
	1993	44	63
Kelly (2001)	1998	45	65
ABS (2002)	1994*	49	64
	1995	43	60
	1996	43	61
	1997	43	61
	1998	44	62
	1999	44	62
	2000	43	61
HILDA wave 2	2002–03	45	63
ABS SIH	2003–04	42	59
	2005–06	45	61

Note: *ABS (2002) suggest their 1994 figures may overstate the concentration of wealth, due to different estimation methods applied in that year.

Source: BITRE analysis of the studies referenced in the table.

Kelly (2001) reports that the number of millionaire families had been doubling every four years up to 1998. In 2003–04, there were roughly 750 000 millionaire households, representing nearly 10 per cent of Australian households (ABS 2006b). ABS (2006h) identified high wealth households as being dominated by older couple only and couple with dependent children households.

At the opposite extreme, a small proportion of Australian households have negative net worth (ABS 2006b, RBA 2004). ABS (2006h) identified low wealth households as being characterised by a lack of home ownership, a reliance on income support payments, and a tendency to be relatively young lone person or sole parent households.

Some components of household wealth are more equally distributed than others. Equity investments, bank accounts, business assets and other assets (cash investments, trust funds, life insurance and collectables) have a relatively unequal distribution, while net property assets, vehicles and credit card debt are distributed more equally across Australian households (Headey, Marks and Wooden 2005).

Kelly (2001) finds that the poorest households often have only one notable asset—superannuation. Since the introduction of the Superannuation Guarantee in 1992, people who would previously not have had any assets are now saving some of their earnings. Kelly (2001) argues that superannuation is the key reason that inequality has not increased, as it has served as an equalising force, offsetting growing inequality in other forms of wealth.

Net worth is much less equally distributed across households than household income (Headey, Warren and Harding 2006a, ABS 2006b). This reflects the fact that wealth is accumulated over time, and rises more strongly and consistently with age than income does.

Sociodemographic characteristics

This section explores a range of social and demographic characteristics which the literature has established as being closely linked to household wealth. As Creedy and Tan (2007, p. 166) note:

> 'Net worth is a stock variable which results from a highly complex process, being influenced by needs, income flows, rates of time preference and risk aversion, the rate of interest and intergenerational transfers. It is strongly affected by life cycle factors such as marriage, purchase of a house with a large mortgage, child-rearing and finally retirement, involving drawing down of savings. The size and composition of the household to which a person belongs change over time. As a further complication, people reach stages of their lives at different ages.'

Age and lifecycle

The amount of wealth accumulated by an individual is closely related to that person's age. Wealth is at its lowest for households headed by 15 to 24 year olds and rises with age, peaking in the 55–64 age group, and then declining as households begin to draw on their assets in their retirement (Headey, Warren and Harding 2006a, ABS 2002).

This typical life-cycle progression from low to relatively high wealth is reflected in the different age structures of low and high wealth households. ABS (2006h) reports that households headed by the under-35s made up 45 per cent of low wealth households and just 5 per cent of high wealth households. Households headed by people aged between 45 and 64 made up 55 per cent of high wealth households and only 21 per cent of low wealth households.

There is still considerable variation in wealth holdings within these age groups. According to Headey, Marks and Wooden (2005), wealth inequality is highest amongst the 15–24 and 25–34 age groups and lowest amongst the 75+ age group.

Age is also an important influence on the composition of the wealth portfolio, with the 65 plus age group preferring less risky portfolios biased towards property and bank accounts and away from business assets and debts of any kind (Creedy and Tan 2007, Baekgaard 1998, Kelly, Cassells and Harding 2004). The share of wealth held as owner-occupied housing increases with age (Baekgaard 1998), while superannuation, motor vehicles and HECS debt were relatively important contributors to the wealth of young households (ABS 2006b).

An alternative way of examining the impact of age on household wealth is through analysis of the different stages of the lifecycle. Household wealth is highest for couple only households with a reference person aged 55–64 and lowest for lone persons aged under-35 and for sole parent households (ABS 2006b).

Headey, Marks and Wooden (2005, p. 169) argue that the higher wealth of couple households is 'relatively uninteresting, given that larger families and households are likely to require more wealth and income to meet material needs'. Analysis of equivalised net worth data, which controls for household size, indicates there is no significant difference between the equivalised wealth of couple households and lone person households (Headey, Marks and Wooden 2005).

Education

Individuals with higher levels of education are expected, on average, to be more productive, have greater income flows over their lifetime and hold greater wealth. However, due to the costs of education (foregone income, student debts) it is not necessarily the case that educational attainment and wealth will be positively correlated for young adults.

Kelly (2001) finds that education and wealth are positively correlated, such that people with degrees have a significantly higher level of household wealth than people with diplomas, who in turn have higher average levels of household wealth than those with vocational qualifications or no educational qualifications. However, education-based differences in average wealth do not become evident until the early to mid-30s age group. From that point, the divergence tends to increase with age and is most pronounced for the 55–59 age group (Kelly 2001).

Headey, Marks and Wooden (2005) find that the educational qualifications of the household reference person explained 5.9 per cent of the variation in wealth across working age households and about 2.0 per cent of the variation in wealth across retirement age households. Households headed by degree holders had significantly higher wealth than those headed by individuals with Year 12 education, who in turn had higher wealth than those headed by individuals with trade qualifications or by individuals who left school before completing Year 12. While household wealth tends to increase with the level of educational qualification, income is more dependent on education.

Kohler and Rossiter (2005) find that post-secondary education has a positive influence on the value of owner-occupied property asset holdings. Marks (2005) reported that attending private school was positively correlated with household wealth compared to attendance at a government school, and non-Catholic private schools had the stronger association.

Parental wealth may also influence a child's educational attainment. For developing countries, Filmer and Pritchett (1999) find that the gap in educational attainment between children from the most wealthy 20 per cent of households and the least wealthy 40 per cent of households was particularly severe in India (gap = 10 years of schooling) and Pakistan (9 years), but was evident in 34 of the 35 countries investigated. For Australia, Beal (2001) finds that greater wealth is associated with a higher willingness by parents to financially support adult children through their higher education.

Employment

Marks (2005) investigated the influence of a range of employment-related variables on wealth, using HILDA. Occupational status was found to be significantly positively associated with higher wealth for men, but not for women. Having no current occupation (i.e. being unemployed or outside of the labour force) reduced wealth by about one-third for women, but the association was not significant for men once controls were introduced for income and work history. A 10 percentage point increase in the proportion of time spent employed since leaving education was associated with 24 per cent greater wealth among men, but the effect was much smaller for women.

Headey, Marks and Wooden (2005) found that longer working hours were positively correlated with household wealth, even after controlling for income, and suggested that this may be due to less opportunities to spend money while working. Kohler and Rossiter (2005) find that having been unemployed at any point has a negative influence on the value of both owner-occupied property holdings and investment property holdings.

Each of the above studies suggests that a person's connection to the labour force has an influence on earnings, and in turn on wealth. However, there is also some evidence that particular aspects of wealth, specifically debt levels, can also influence labour force participation. Belkar, Cockerell and Edwards (2007) find that indebtedness increases an individual's probability of participation in the labour force because of the obligation to continue to service the debt. The effects are greatest for women with children.

Health, happiness and lifestyle

The health-wealth relationship is potentially bi-directional in that poor health can impact on wealth by restricting income earning and saving opportunities, while greater wealth may imply greater capacity to purchase quality health services and to weather health shocks.

Evidence from the US shows that both chronic health problems and new health events lower wealth, and the extent of wealth depletion is greater when the health shock occurs later in life (Lee and Kim 2007). There is also evidence that households in poor health are less likely to hold risky financial assets (Rosen and Wu 2004, Edwards 2008).

An Australian study by Cai (2006) found that wealthy people were significantly less likely to experience a transition from good health to poor health. Headey, Marks and Wooden (2005) found that physical health, mental health and exercise were not significant predictors of household wealth. However, smoking behaviour and very heavy drinking were negatively correlated with wealth, while drinking of alcohol in moderation was positively correlated with wealth.

Headey and Wooden (2003) find that wealth and income both contribute significantly and positively to mental health, but have much stronger effects on perceived financial stress. Increases in wealth matter more to improving mental health than do increases in income. Structural equation modelling, however, suggests that the effects of wealth and income on mental health operate only indirectly, via perceptions of financial stress.

With regard to happiness and life satisfaction, Headey, Warren and Harding (2006a) suggests that wealth actually matters much more to subjective wellbeing than income does. However, a very large increase in wealth would be required to produce the same increase in life satisfaction as can be attributed to getting married or obtaining a job. There are a number of different aspects of life satisfaction, and household wealth is most closely related to material aspects such as satisfaction with home, employment opportunities and financial situation. Hunter Valley Research Foundation (2006) found that both absolute and relative measures of wealth were statistically associated with increased subjective wellbeing in the Hunter.

Other characteristics

According to Headey, Marks and Wooden (2005), the wealthiest households in the HILDA survey tend to have male, Australian-born reference persons. Overseas-born reference persons had a negative influence on household wealth, even for those born in English speaking countries (Headey, Marks and Wooden 2005). Belkar (2005) also finds that immigrants accumulate less wealth, but that they are able to catch up through greater time in Australia and through the accumulation of human capital. Moreover, the children of immigrants do not appear to experience any discrimination with regards to wealth accumulation (Belkar 2005). Cobb-Clark and Hildebrand (2008) find that foreign-born couples hold more wealth in their homes and less wealth in the form of financial assets and vehicles, compared to equally wealthy native-born couples.

Households with Indigenous people as the reference person had significantly lower wealth than those headed by non-Indigenous people, and this held true even after education, marital status, employment status and income were taken into account (Marks 2005).

Marks (2005) found that both marriage and being in a de facto relationship had positive correlations with net worth, and although marriage had the stronger correlation,

both these effects were larger for women than men. Being widowed was positively correlated with wealth, and this effect was also strongest amongst women.

Headey, Warren and Harding (2006b) found that people brought up in 'intact' families tended to have much higher net worth than those brought up by only one parent. Differences in wealth were much more marked than differences in income.

Headey, Marks and Wooden (2005) also investigated the influence of self-reported savings behaviour and attitudes to risk on household wealth. Those who reported that they save had significantly higher wealth, even after controlling for income. Amongst working age households, the greater the amount of financial risk the reference person was willing to take on, the greater the level of household wealth. Few retirement age households were willing to take financial risks, but those who were willing to take on average risks had significantly higher wealth than those who were not willing to take any financial risk. The direction of causation is not particularly clear, as people may not want to take risks as a consequence of not possessing wealth, rather than not having wealth because they refuse to take risks (Headey, Marks and Wooden, 2005).

Wealth and economic wellbeing

With the increasing availability of household wealth information, there have been some developments in the understanding of the effects of wealth on economic wellbeing. In particular, the recent increase in property values has been associated with a surge of studies investigating the relationship between wealth and consumption.

Conceptually, wealth benefits overall economic wellbeing through enabling increased consumption opportunities, generation of income flows and increased economic security.

Empirically, there is evidence that greater wealth is associated with:

- **Increased income flows:**

  Wealth and income are partially dependent upon one another in that income can be saved or used to purchase assets, which increases the wealth holdings of a household. Conversely, wealth can be used to generate income through interest, dividends or rental receipts.

  Household wealth is positively correlated with household income for working age households. Across the population as a whole, the relationship between household wealth and household income is only of moderate strength, with a correlation of 0.35 (Headey, Warren and Wooden 2008). It is quite common for low income households to have high wealth, and vice versa (ABS 2006b, Baekgaard 1998). Younger households generally have relatively low wealth, even if incomes are high. Many older households have accumulated significant wealth holdings over their lifetime, but in their retirement these households will typically have low incomes (ABS 2006b).

  There is also evidence that the principal source of income for a household is also closely related to the level of household wealth (ABS 2006b).

- **Increased consumption:**

  Maclennan and Tu (1998) found that perceived reductions in wealth due to falling house prices were significantly associated with reduced consumer spending for individuals in the UK. ABS (2007b) finds that households with both low income and low wealth have considerably lower expenditure on goods and services than households with low income, but medium or high wealth. Thus, consideration of both income and wealth provides a much better explanation of household expenditure, than relying on income data alone (ABS 2006b).

  At a more aggregate level, Tan and Voss (2003) find that above trend growth of wealth in recent years has been a significant contributor to consumption growth. Dvornak and Kohler (2007) find that a $1 increase in per capita stock-market wealth is eventually associated with an annual consumption increase of 6 to 9 cents, while a $1 increase in per capita housing wealth is eventually associated with an annual consumption increase of about 3 cents.

- **Increased economic security:**

  Wealth provides economic security, enabling adequate living standards to be maintained when income is reduced due to planned or unforeseen events, such as retirement, unemployment or poor health. People save to insure against risk and generally save more when they expect their financial situation to deteriorate. Thus, saving decisions are strongly affected by variation in earnings and the probability of job loss (Guariglia 1998). Carroll and Samwick (1995a) find that wealth is systematically higher for those with greater income uncertainty, and that holdings of liquid assets are most responsive to income uncertainty.

  Various studies have considered the relationship between wealth and unemployment shocks (e.g. Carroll, Dynan and Krane 1999), weather shocks for farmers (e.g. Rosenzweig and Binswanger 1993), natural disasters (e.g. Carter, Little, Mogues and Negatu 2004) and health shocks (Lee and Kim 2007). For example, DOTARS (2005) finds that the impacts of the recent drought have been buffered by the ability of businesses to borrow against the asset value of their properties.

- **Less poverty and disadvantage:**

  Marks (2005) finds that wealth is a more important determinant than income of which households are experiencing financial stress. Similarly, the subjective assessment of individuals as to whether they are poor or not gives more weight to wealth than to income (Marks 2007).

  At a regional scale, Sorensen (2004) finds that wealth indicators provide quite a different perspective on regional advantage and disadvantage than the ABS' socioeconomic indexes for areas (SEIFA).

- **Increased business start-up:**

  The link between wealth and new firm formation is relevant because entrepreneurship is often seen as one of the key drivers of regional economic growth (BTRE 2003a). Personal wealth is an important source of funding for new business start-ups (Bates 1997, Huck et al 1999). Hurst and Lusardi (2006) find that there is only a strong and positive relationship between wealth and business entry for households at the very top of the wealth distribution. Fairlie and Krashinsky

(2006) find that increased rates of business entry are observed throughout the asset distribution when recent job losers and the remainder of the population are considered separately.

At a regional scale, several studies have found that the availability of local financial capital is a significant determinant of new business start-ups (Jian and De 2006, Sutaria and Hicks 2004), while others have found no evidence of a relationship (Hurst and Lusardi 2006, Robson 1996). Wealth can potentially contribute to regional economic development through encouraging entrepreneurship—but the evidence as to whether a regional relationship exists is inconclusive.

The above provides an introduction to the ways in which wealth is related to various aspects of household and regional economic wellbeing, and the available evidence is explored in more depth in Chapter 10.

More generally, wealth can create a range of opportunities. For example, Olsberg and Winters (2005), in a study of Australians aged 50 and over, found that home owners almost uniformly thought of their home as offering them a diversity of choices for the future. Taking an intergenerational perspective, ABS (2006h, p. 145) notes that:

> 'children in high wealth households may have greater access to educational opportunities than those in low wealth households . . . They may also be able to access credit and build wealth using their parents' wealth as security or to benefit directly from low or no interest loans and gifts.'

Conversely, a lack of wealth can restrict opportunities and limit the set of choices that are available to households. The migration opportunities available to households are particularly relevant here, due to their spatial implications. According to Larson (2006, p. 1), 'the likelihood that we change residence and whether our new home is close by or far away is profoundly affected by our living arrangements, our schooling or occupation, and by the amount of wealth we have acquired.' She argues that '[i]t is fanciful to expect that the residents of the poorest regions are able to move to more prosperous ones' (ibid, p. 14). Rather, wealthier people selectively move to affluent regions. Gondor and Burbidge (1992) also highlight how limited housing wealth can restrict choice and opportunities within Melbourne. For the UK, Henley (1998) concludes that the amount of housing wealth is an important factor in explaining mobility, and that negative equity,[3] in particular, serves to constrain mobility.

One channel through which wealth can influence interregional migration is through downsizing. In their study of Australians aged 50 and over, Olsberg and Winters (2005) report that downsizing to release wealth is an option most typically used by major city residents choosing to migrate to regions with lower property values. Residents of regional centres and rural areas were much more likely to state they could not afford to move. Wealth provides opportunities, with high wealth households being less constrained in their migration choices than low wealth households.

3. Home owners with negative equity are constrained in their ability to move house, as the market value of the house is insufficient to repay the outstanding mortgage. Falling property values have recently put an increasing number of Sydney households at risk of negative equity. House price falls have been greatest in the Sutherland Shire, the Hills district and Sydney's western suburbs (Gardner and Carswell 2008).

Spatial differences in wealth

There have been relatively few published studies which directly address regional differences in household wealth within Australia. Estimates of household wealth are, however, available for states, territories, capital cities and state balances (ABS 2006b) and this data is summarised in Chapter 5. A number of Australian and overseas studies provide relevant insights into spatial differences in wealth and are reviewed below.

Australian evidence

ABS (2002) produced experimental estimates of household wealth for Australia's states and territories. In 2000, average household net worth was highest in New South Wales (NSW), followed by the Australian Capital Territory (ACT) and Victoria, and lowest in Tasmania. The much higher average dwelling values in NSW were the main reason that net worth in NSW exceeded that in the other states. Average household net worth was estimated to have grown most rapidly in NSW between 1994 and 2000 (50 per cent growth), and while the Northern Territory (NT) and Western Australia (WA) also grew strongly, Queensland and the ACT experienced relatively slow growth.

Using the 2003–04 SIH, ABS (2006h, p. 150) concludes that 'there is considerable variation in household wealth between and within Australia's states and territories'. ABS (2007c) considers home equity differences across capital cities and state balances, based on the SIH, for the 1994–95 to 2003–04 period. The study finds that home equity grew 73 per cent in capital cities, compared to 53 per cent in the rest of Australia. Moreover, average home equity was generally much higher in the capital cities ($344 000 versus $215 000), peaking for Sydney ($503 000) and at its lowest in regional Tasmania ($148 000).

The HILDA survey is also capable of supporting spatial analysis of household wealth. Based on 2002 HILDA data, RBA (2004) argues that geographical differences in household wealth are mainly due to regional differences in property values. Kohler and Smith (2005) used HILDA data to examine the influence of location on housing's share of the wealth portfolio. They found that, on average, households in the capital cities held a higher share of their assets in their own home. Business assets, vehicles, bank accounts and equities were of relatively greater importance outside the capital cities. An increase in the level of urbanisation (persons per square kilometre) led to a significant increase in the housing share, controlling for other factors. They argue this points to:

> 'an 'urban premium' being paid for housing in populous cities for benefits such as education, infrastructure and more frequent contact with a larger pool of people. One outcome of this 'urban premium', in terms of asset allocation, is that households in urban areas tend to have a less diversified portfolio.' (Kohler and Smith 2005, p. 22).

Kelly, Cassells and Harding (2004) use HILDA to examine debt levels for Australian states, and note that the ACT has the highest average debt, the equal highest debt-to-income ratio (with Western Australia) and the highest proportion of households with debt. Tasmanians have the lowest average debt and the lowest debt-to-income ratio, while South Australia has the lowest proportion of households carrying debt.

Taking a more disaggregated spatial perspective, National Economics' *YourPlace* database (National Economics nd) includes estimates of household wealth for all Australian Local Government Areas (LGAs). The wealth indicator covers housing, the value of unincorporated business assets and financial assets, but excludes superannuation. In 2001, the LGAs with the highest wealth rankings were North Sydney, Mosman and Manly in Sydney, and Boroondara and Bayside in Melbourne. The LGAs with the lowest rankings were Mount Morgan in Queensland, Brighton and Central Highlands in Tasmania, Port Pirie City and Districts in South Australia (SA) and Barraba in NSW.

Sorensen (2004) used ATO personal tax data on dividend imputation credits and interest received from bank deposits to make inferences about differences in financial wealth across Australian Statistical Subdivisions (SSDs). Metropolitan SSDs had higher average asset values, but displayed greater interregional variation than non-metropolitan SSDs, suggesting considerable socioeconomic segregation within our largest cities. Sorensen (2004) argues that the wealth performance of middle and outer ring suburbs often differs little from their rural and regional counterparts. He reports:

> 'an apparently much higher propensity to save among low income rural people than their metropolitan counterparts. This might be a matter of personal inclination in a risky economic environment, but it might also reflect the low saving capacity of young first-home owners in the poorer suburbs of our capital cities or generational (age) difference' (Sorensen 2004, p. 4).

The Lakes and Avon SSDs in Western Australia's wheatbelt are identified as rural areas with a particularly strong investment record. In contrast, people living in the large regional centres (e.g. Toowoomba, Bendigo, Wagga Wagga) are identified as having a poor savings record. The savings effort was also found to be weak in many parts of remote Australia, particularly in mining regions. Coastal resorts presented a different picture, with investment income from financial assets being regarded as especially important for retirement and lifestyle regions, which attract the in-migration of asset-rich, but income-poor, retirees and rat-race escapees (Sorensen 2004).

International evidence

Some relevant messages can also be drawn from the international literature. There is evidence of considerable spatial variation in household wealth within the US. Caldwell, Clarke and Keister (1998) present US state estimates of median net worth, which ranged from a low of $17 400 for Nevada to a high of $40 600 for Nebraska in 1992.

Federal Reserve Bank of Kansas City (2005b) reports that household wealth is relatively high in many rural regions. Another report by the same author found that banking deposit depth[4] was highest in rural and small town counties and lowest in metropolitan areas—however, growth in banking deposits between 1980 and 2002 was weakest for rural counties (Federal Reserve Bank of Kansas City 2005a).

Fisher and Weber (2004) conclude that place of residence is an important determinant of asset poverty in the US, even after controlling for household characteristics. They find that the suburban parts of large metropolitan areas have the lowest risk of being

4. Banking deposit depth 'is the sum of country bank deposits, first divided by county population and then by per capita income' (Federal Reserve Bank of Kansas City 2005a, p. 1).

net worth or liquid asset poor. The risk of being net worth poor is greatest for those living in central metropolitan areas, while the risk of being liquid asset poor is greatest for non-metropolitan areas. Non-metropolitan residents hold few liquid assets, with most of their wealth being tied up in their farm and residence, and they also hold less debt than their urban counterparts. Central metropolitan residents hold relatively few housing and vehicle assets. A similar pattern of asset-poor neighbourhoods in the urban core surrounded by higher wealth suburbs was observed by Irvin (2007) for the US city of Salem.

Wealth held in the form of home equity has also been investigated at a regional scale. Nothaft and Chang (2005) report that home owners in US suburban areas have the greatest home equity wealth, followed by central city residents, with non-metropolitan areas having the lowest home equity. The western and north-eastern states consistently showed higher levels of home equity than the mid-west. For the UK, Hamnett (1999) notes that due to regional differences in house prices there are marked regional differences in home equity, with equity at its highest for London, the south-east and the south-west, and less than half that value for Scotland. Hamnett (1992) found considerable variation in the regional incidence of housing inheritance in the UK and concluded that housing inheritance tends to reinforce the existing regional pattern of housing wealth differences.

A Swedish study by Goetzmann et al (2004) finds that wealth portfolios are more diversified in rural areas than urban areas, and that the tendency to focus the portfolio increases with the degree of industry specialisation of the city. The authors conclude that cities appear to enhance risk taking behaviour through the processes of professional specialisation and knowledge spillover. In the US, Brown et al (2007) established that the likelihood of an individual owning stocks increases with the average rate of stock market participation in the person's community. The effect is stronger in more sociable communities.

The Australian and overseas studies have some common themes:

- There is considerable spatial variation in household wealth and its components—particularly owner-occupied property assets.
- Household wealth is high in some rural regions.
- There is considerable variation in wealth within metropolitan areas.
- Metropolitan households have a less diversified wealth portfolio.

Summary

In recent years there has been a considerable increase in the number of studies investigating household wealth. In Australia, this increase is attributable to the collection of comprehensive household wealth data, for the first time, in the SIH and HILDA surveys. Research has largely been focused on investigating:

- the distribution and composition of wealth
- the relationship between wealth and various social and demographic characteristics
- the relationship of wealth to income or consumption.

The dynamics of wealth, and spatial differences in wealth, remain less well understood. The present study focuses on addressing the latter gap in the Australian literature, by developing and analysing new measures of household wealth for Australia's regions.

Key messages

Australia compares favourably to the G-7 nations in terms of recent rates of growth in household wealth.

Owner-occupied dwelling assets are the major component of the household wealth portfolio. Compared to other countries, a relatively large share of Australian wealth is held as dwelling assets.

Superannuation is the most important financial asset held by Australians.

The wealth components which grew most rapidly between 1992 and 2005 were land, superannuation, equities and loans. Liabilities grew more rapidly than assets.

Wealth is much less equally distributed across households than income.

Wealth inequality has remained unchanged over the last two decades.

The amount of wealth accumulated by an individual is closely linked to age. Wealth is also related to education, employment, income and health status.

Wealth benefits overall economic wellbeing through enabling increased consumption opportunities, generation of income flows and increased economic security.

There is also evidence that wealth can impact on regional economies through generation of new business start-ups and through feeding into the migration decision.

There is considerable variation in household wealth both within and between Australia's states and territories. Regional differences in property values are an important contributor to this variation.

Chapter 3 Data and methodology

Introduction

National information on average household wealth is already available from the HILDA survey and the ABS SIH for 2003–04. A comparison of the wealth estimates from these two surveys was undertaken, focusing on the relative reliability of the respective wealth estimates at the capital city and state balance scale. The SIH capital city and state balance estimates were generally based on larger samples, had lower Relative Standard Errors (RSEs) and were more consistent with external data sources than the equivalent HILDA estimates. The overall assessment was that the SIH produces considerably more reliable estimates of household wealth and its components at this scale, and so the SIH was chosen as the primary data source for this study.

In BITRE's study, the 2003–04 SIH provides benchmark estimates of household wealth at the capital city and state balance scale. Chapter 4, which provides an overview of household wealth in Australia, and Chapter 5, which presents information on household wealth for aggregate regions, both rely on the 2003–04 SIH.

However, the key contribution of this study is the *disaggregation of the SIH household wealth estimates to a detailed regional scale*.[5] As the SIH can only provide reliable estimates of wealth at a highly aggregated regional scale, a range of additional data sources will provide information on regional variations in different components of wealth. Examples of such data sources include Australian Property Monitors' (APM) house price statistics, ABS' *Census of Population and Housing* and the ATO's *Taxation Statistics*. Small area estimation techniques will be used to integrate these small area data sources with the SIH benchmark data to produce detailed regional estimates of household wealth.

The small area estimates of average household wealth are presented in Chapter 6 and the small area estimates of the composition of wealth are analysed in Chapter 7. While the available data did not permit an assessment of the distribution of wealth within each small area, Chapter 5 presents information on the distribution of wealth within states and territories, remoteness classes, urban centre size categories and capital cities and state balances.

This paper is focused on providing a snapshot of household wealth for 2003–04. The 2003–04 SIH represented the ABS' first official measurement of household wealth[6] and new household wealth data from the 2005–06 SIH has recently been released (ABS 2007d). Chapter 8 analyses the main changes in wealth over time, based on a comparison of the 2003–04 and 2005–06 ABS SIH.

5. The regional measures of household wealth allocate assets to the region in which the household usually resides, not to the region in which assets are physically located.
6. Experimental estimates of household wealth, based on synthetic estimation techniques, were published in ABS (2002).

The first part of this chapter outlines the main information sources for this study. BITRE's methodology for developing small area estimates of household wealth for 2003–04 is described. The geographical unit of analysis, the SLA, is then introduced, and the chapter concludes by providing information about the quality of the small area estimates.

Data sources

This section provides a brief outline of the benchmark data source (the ABS' SIH 2003–04) and the auxiliary data sources used to produce BITRE's small area estimates of household wealth. The auxiliary data sources are summarised in Table 3.1 and have the following essential characteristics:

- They provide measures which are conceptually and empirically closely related to one or more components of household wealth.
- Measures are available at a small area scale (e.g. Statistical Division, postcode, SLA).
- The data sources are national in scope.

ABS Survey of Income and Housing 2003–04

The 2003–04 SIH collected detailed information about the income, assets, liabilities and household characteristics of persons aged 15 years and over resident in private dwellings throughout Australia. The SIH was previously conducted annually between 1994–95 and 1997–98, as well as in 1999–00, 2000–01 and 2002–03. Comparable information on owner-occupied property assets and debts are available for these years. However, the 2003–04 survey represents the first time that comprehensive asset and liability information has been collected. The 2005–06 SIH also includes the full range of wealth-related questions, but was not released until after BITRE's small area estimates were finalised.

The 2003–04 survey included a final sample of 11 361 households, representing 78 per cent of the households originally selected to participate. Data was collected by personal interview between July 2003 and June 2004, in conjunction with the *Household Expenditure Survey*. Information was collected using a household questionnaire which gathered information on household characteristics, assets and liabilities, as well as a person questionnaire which collected information on personal characteristics and income (ABS 2006e).

The scope of the survey excludes residents of non-private dwellings, households which contain members of non-Australian defence forces or diplomatic personnel of overseas governments, and households in very remote areas and discrete Indigenous communities. The survey scope covers 98 per cent of the people living in Australia. The exclusion of very remote areas and Indigenous communities has a significant impact on the representativeness of the NT estimates, where such households account for about 23 per cent of the population (ABS 2006e).

The published SIH estimates are weighted to be representative of the population in each capital city and state balance category by age and sex (and except in the NT, by labour force status). These published SIH estimates of average household wealth have been used to benchmark BITRE's small area estimates at the capital city and state balance scale.

BITRE has access to the Confidentialised Unit Record File (CURF) of the 2003–04 SIH. The CURF has been used to:

- produce special tabulations of household wealth (e.g. wealth composition by lifecycle group, Gini coefficients for each capital city and state balance category)
- undertake regression analysis to identify the key factors influencing household wealth
- investigate data quality issues
- provide guidance on the most relevant small area data sources.

Australian Property Monitors (APM) property sales price data

This data is compiled by the Valuers General offices in the various states and territories and reflects the average price of property sales reported to these offices, measured at the time of contract exchange. The data provided to BITRE by APM relates to residential property sales, and excludes property sales identified as rural, agricultural or broadacre.

APM is one of several sellers of property sales price data. It was chosen as it had the most comprehensive spatial coverage. Some of the alternatives related only to metropolitan areas, while others exclude one or more states. As a result of agreements with the Valuer Generals, APM receives data on almost every available property sales transaction that has occurred throughout Australia (APM 2006). APM provided BITRE with data on the average and median sales prices for both separate houses and units, as well as the number of sales, for each SLA, LGA and SSD for the 1995–96 to 2005–06 period.[7]

This data source provides an objective and reasonably comprehensive measure of residential property sales. APM perform a number of data quality and inconsistency checks, including matching the Valuer Generals' data to auction results, previous sales of that property and the average sales price for that suburb/locality. Unlike the SIH and HILDA, the APM data measures actual property values as agreed in contracts of sale, not the perceived values of homeowners.

The APM data has been widely used and assessed, most notably by the RBA and ABS (RBA 2004, ABS 2006g). The APM property sales price data, in conjunction with ABS *Census of Population and Housing* data, forms the basis of the RBA's estimates of the value of the residential dwelling stock and the ABS' national estimates of the value of land owned by households.

There are some issues with the property sales data at a small area scale. Some less populated areas have few sales in a period and so there is considerable risk that average price data will not be representative for these areas. Other small and/or

7. NT data commences in 2000–01 and Tasmanian data commences in 2002–03.

remote areas have no sales recorded in the APM data. Another potential issue is that the properties transacted in a period may not be representative of the total housing stock in an area, but this is equally true of the alternative sources. The availability of separate data for houses and units does allow for one aspect of composition to be controlled for within the estimates.

The APM data has been used to allocate the SIH estimates of owner-occupied property assets down to a small area scale.

Australian Taxation Office (ATO) Taxation Statistics

The ATO's *Taxation Statistics* publication (ATO 2006) is released annually and contains data for Australian postcode areas. The following data items for individual taxpayers are relevant to household wealth:

- imputation credits, and number of persons reporting imputation credits
- gross interest, and number of persons reporting gross interest earnings
- net rent, and number of persons reporting net rent earnings
- net business income or loss, and number of persons reporting business income or loss
- HECS assessment debt, and number of persons reporting HECS debt.

The data items are compiled by ATO from the tax returns submitted by individual taxpayers. Tax returns submitted by companies, funds, trusts and partnerships and the Fringe Benefits Tax annual return form are excluded. Only tax returns processed before 31 October each year (about 95 per cent of all returns) are included.

All of these data items are available at a postcode level back to 1999–2000, and some are also available for earlier years. Postcode-level data was converted to an SLA basis using population-weighted concordances.

The tax data has been used to allocate the SIH estimates of bank accounts, shares and trusts, other property assets, other property debts and HECS debt down to a small area scale.

ABS Census of Population and Housing

The ABS 2001 *Census of Population and Housing* contains the following data items which are directly relevant to household wealth and available at a small area scale:

- number of households
- home ownership rate
- type of dwelling (separate house or unit)
- proportion of households with mortgage or home loan outstanding
- amount of mortgage repayments

- number of vehicles
- number of self-employed persons by industry (agriculture/other).

For wealth components for which there is no small area data source that directly reflects that component, census data on the sociodemographic characteristics of the local population has been used to develop small area estimates.

Data from the 2006 census was not available at the time the small area estimates were being produced.

ABS sources of personal income data

ABS has compiled experimental estimates of the major sources of personal income at the SLA scale for 1995–96 to 2000–01 (ABS 2005a). The estimates have been compiled by bringing together ATO tax return data from individual taxpayers with income support customer data from the then Australian Government Department of Family and Community Services. The income received by individuals has been grouped into the following categories:

- wage and salary income
- own unincorporated business income
- investment income
- superannuation and annuity income
- government cash benefit income
- other income.

The information on superannuation and annuity income for 2000–01 contributes to BITRE's small area estimates of superannuation assets.

ABS regional small business statistics

ABS has also used ATO data to compile experimental estimates of small business numbers, income and expenses for all Statistical Divisions (SDs) for the 1995–96 to 2000–01 period (ABS 2004b). The estimates are disaggregated by industry and reflect completed tax returns from companies, partnerships and trusts and individuals reporting business income.

ABS defines small businesses as having total income or expenses of between $10 000 and $5 million in the financial year. A key assumption is that these small businesses are single location, or all locations are within the one region (ABS 2004b).

The information on average non-farm business income for 2000–01 contributes to BITRE's small area estimates of net business assets.[8]

8. ATO *Taxation Statistics* data covers roughly half as many businesses as the ABS data, due to the exclusion of companies, partnerships and trusts, and so the ABS data was the preferred source.

ABS Agricultural Finance Survey (AFS), 1999–2000

This survey provides estimates of the financial performance of farms for the financial year ended 30 June 2000. The scope of the AFS is restricted to management units undertaking agricultural activity and having an estimated value of agricultural operations of $22 500 or more (ABS 2001).

The AFS collects information on the net worth of farms and the ABS' *Integrated Regional Database* makes this net worth data available for 42 Australian regions.[9] This information contributes to BITRE's small area estimates of net business assets.[10]

ABS Estimated Resident Population (ERP)

The ERP data represents the ABS' official estimates of population for Australia and its regions. Data is released annually at the SLA scale (ABS 2007a). ABS has also provided us with SLA data on estimated resident households (ERH) for 2001. Together, the ERP and ERH data have been used by BITRE to develop small area estimates of the number of households for 2003–04.

Additional data sources

The aforementioned data sources all serve as inputs into the small area estimates of household wealth. Several additional sources of information were used to analyse these household wealth estimates. BITRE's *Taxable Income Database* (BITRE 2008a) is central to the analysis in the later chapters of this report, alongside other indicators of wellbeing, such as the ABS' SEIFA indices[11] and data from BITRE's income support payments database (BITRE forthcoming) and cost of remoteness study (BITRE 2008b).

Small area estimation techniques

The primary objective of this study is to develop and analyse new measures of household wealth for Australia's regions. The 2003–04 SIH provides reliable measures of household wealth at the capital city and state balance scale, and BITRE has used these as its benchmark estimates. BITRE has integrated this benchmark data with a range of small area data sources to produce small area estimates of household wealth for 2003–04.

Prior to the recent direct measurement of wealth in the SIH and HILDA, there were a number of studies which estimated the level, composition and distribution of household wealth for Australia. These studies typically relied on income survey data and made use of the income capitalisation approach,[12] which uses data on income

9. These regions generally correspond to SDs or combinations of SDs. However, in WA the data is available for combinations of SSDs.
10. The ABS data was preferred to net worth estimates from ABARE's *Farm Survey*, as the coverage of the ABS survey extends well beyond broadacre agriculture. While the ABS data is more dated, it is available at a more disaggregated regional scale.
11. For information on SEIFA, see ABS Cat. 2033.0.55.001.
12. The income capitalisation method is, by its nature, limited to those assets that yield a recorded income. Some major asset types, such as superannuation and owner-occupied housing, do not have concurrent recorded income streams.

flows generated by a particular asset class, and applies a multiplier reflecting the relevant rate of return, to estimate the value of the underlying asset. For example, interest income data is used to estimate interest bearing assets, dividend income is used to estimate the value of equities and rental income is used to estimate investment property assets. Key studies in this mould include Dilnot (1990), Baekgaard and King (1996) and Kelly (2001).

In contrast, Bacon (1998) considered that the aggregate level of household wealth could be better estimated from the Treasury and Australian National Accounts time series, and the shortcomings of using income survey data could be avoided by only using the income survey to provide information on the proportion of aggregate wealth which should be allocated to each population group.

The above studies do not explore the spatial distribution of wealth, and there has been limited research on this issue. ABS (2002) produced household wealth estimates at the state/territory scale. Sorensen (2004) produced estimates of interest earning assets and shares at the SSD scale using ATO data on interest earnings and dividend imputation credits and by making assumptions about rates of return.

There is no published Australian study which attempts to develop comprehensive measures of household wealth for Australia's regions. This study will benefit from the availability of capital city and state balance benchmarks from the SIH, and so unlike earlier studies, will not have to make assumptions about rates of return to convert income data into asset values. Instead, in an approach similar to that adopted by Bacon (1998) for aged households, the small area data sources will only be used to inform the proportional distribution of assets and liabilities across the small areas within each capital city and state balance category.

In this project, BITRE will integrate the small area data sources with the SIH benchmark data using *small area estimation techniques* to produce detailed regional estimates of household wealth. ABS (2006f) provides an overview of the different types of small area estimation techniques. The following discussion draws on ABS (2006f) to outline these techniques and assess their relevance to developing small area[13] estimates of household wealth.

Techniques

1. **Direct estimates**

   SIH sample sizes are too small to produce reliable direct estimates at a small area scale.

2. **Broad area ratio estimator (BARE)**

   This approach involves applying the reliable broad area[14] estimate proportionately across all small areas contained within the broad area. For example, the SIH provides estimates of credit card debt at the capital city and state balance scale, and the BARE approach would involve assuming that the average value of credit card debt was constant for all small areas within each capital city and state balance category.

13. The term 'small area' is used generically to refer to estimates produced at a range of geographic scales, such as SDs, SSDs, LGAs or SLAs. However, for this study, small area estimates have been produced at the SLA scale.
14. In this study, the capital cities and state balances are the selected broad areas.

3. **BARE with auxiliary data**

   The survey-based broad area estimates are allocated across small areas in proportion to the auxiliary data.

   a. Auxiliary data on wealth components

      For example, the SIH provides reliable estimates of average vehicle assets at the capital city and state balance scale, and census data on vehicle ownership in each small area could be used to allocate the broad area estimates down to the small area scale.

   b. Auxiliary data on population structure

      For example, information on the age/sex composition of each small area could be used to allocate the broad area estimates of superannuation assets down to the small area scale.

4. **Calibration estimator**

   Involves replacing the original survey weights with new weights which are calibrated to represent the population of each small area. Microsimulation models adopt this approach and adjust the survey weights so that estimates of population count by age and gender (and generally other variables as well) agree with the known population composition of small areas. To be effective, the characteristic of interest must be highly dependent on the calibration variables.

5. **Regression methods**

   This approach involves estimating the statistical relationship that holds between the survey direct estimates of the characteristic of interest and a range of auxiliary variables (e.g. age, sex, administrative data on house prices or interest income) at a small area scale.

Techniques 1 and 5 cannot be used in this project, as they require access to an unconfidentialiased SIH unit record file which contains small area identifiers, and the ABS does not make such files available. BITRE has access to the SIH CURF, which only contains broad area identifiers. Technique 4 could potentially have been implemented with the available data, but requires considerable technical expertise and was not the preferred approach. It is best suited to developing small area estimates of phenomena which are highly dependent on population characteristics measured in the census, such as age, sex and income. Housing assets are the most important component of wealth and are not particularly dependent on such characteristics: place is a more dominant influence.

In contrast, Technique 2 is very straightforward to implement. Its major drawback is the underlying assumption that average asset/liability values are constant for all small areas within each broad area, which is difficult to justify. Technique 2 essentially serves as the fallback approach that will be used for those wealth components for which no relevant auxiliary data is available or where the use of auxiliary data produces poor quality small area estimates.

For most wealth components it should be possible to improve upon the small area estimates which could be generated by Technique 2, by incorporating small area

auxiliary data. In other words, Technique 3 (BARE with auxiliary data) was chosen as BITRE's preferred approach for developing small area estimates of household wealth.

Relevant auxiliary data includes wealth-specific information as well as information on the characteristics of the small area's population. Kelly (2001) notes that wealth-specific auxiliary data is usually found in one of three forms. All three are essentially variants of Technique 3a.

i. Direct information on the values of assets/liabilities

   The key example of where direct value information is available at a small area scale is owner-occupied housing assets. Should the small area data sources prove to be comparable to the SIH asset values, then small area estimates can simply be derived by benchmarking the small area auxiliary data to ensure it aggregates to the SIH broad area totals.

ii. Income flows generated by asset/repayment flows generated by debt

   Examples of where small area information on flows is available include interest income, dividend imputation credits, rental earnings and HECS repayments (ATO *Taxation Statistics*) and mortgage repayments (census). For the relevant wealth components, the SIH broad area estimates can be allocated across small areas in proportion to the auxiliary data. This involves the assumption that a constant multiplier (rate of return) applies for all small areas within a capital city and state balance. This approach is similar to the income capitalisation approach, but the rate of return is not externally imposed.

iii. Ownership of a particular asset

   Examples of where small area information is available on the proportion of the population that owns a particular asset/liability include census data on the proportion owning vehicles and the self-employment rate. For these wealth components, the SIH broad area estimates can be allocated across small areas in proportion to the auxiliary data. This involves the assumption that a constant multiplier (a constant asset value per owner household) applies for all small areas within a capital city and state balance.

Much of the applied and theoretical literature on small area estimation techniques focuses on regression-based approaches, which were not an option in this study. ABS (2002) is perhaps the study most similar to the present one. It developed experimental wealth distribution data for Australia for the 1994 to 2000 period by drawing together a range of different data sources. Asset and liability data were estimated for each household, and the household-level estimates were benchmarked to the National Accounts household sector balance sheet to create a 'synthetic'[15] household wealth dataset. BITRE's study differs in that benchmark data is now available at a more disaggregated scale (for capital cities/state balances, rather than Australia as a whole) and BITRE's estimates are being developed at a small area scale rather than a household scale. Nevertheless, ABS (2002) has much in common with the present study in terms of its reliance on the SIH and a range of wealth-specific auxiliary data and the use of ratio-estimator approaches to develop synthetic estimates of household wealth.

15. The term 'synthetic estimates' encompasses ratio estimators as well as fixed effects regression models. Both use an association between the variable of interest and one or more directly measured characteristics in one area to predict the variable of interest in other areas where it is not directly measured or not reliable.

Small area estimation techniques have been applied in a wide range of contexts. For example, ABS (2006c) applies the BARE with auxiliary data approach to estimate agricultural water use for Australian SLAs. Other examples include ABS (2005b) which applies small area estimation techniques to estimate disability rates, Southern Health Care Network (2002) which estimates morbidity burdens in LGAs, DEWR (2006) which estimates unemployment rates for SLAs, and Office for National Statistics (2003) which applies small area estimation techniques to a range of issues, including incomes and social capital.

Key issues when using small area estimation techniques include:

- The development of good quality small area estimates is highly dependent on the availability of small area auxiliary data which is closely related to the target variable.
- Small area estimation techniques rely on assumptions, which have the potential to introduce immeasurable bias into the small area estimates.
- The choice of scale at which small area estimates are produced and analysed.

A discussion of data quality issues and validation is presented later in this chapter.

Developing household wealth estimates for 2003–04

Table 3.1 lists the auxiliary data sources and the small area estimation techniques that BITRE has used to allocate these benchmark estimates down to the SLA scale.

For each wealth component, the auxiliary data source and the SIH estimates were compared at the national and capital city and state balance scale to assess their conceptual and empirical congruence. If the SIH and small area data source(s) did indeed correspond closely, the allocation method was then selected and the quality and plausibility of the small area estimates was assessed.

Some wealth components had multiple potential auxiliary data sources. For example, census data on mortgage repayments and mortgage ownership is relevant to owner-occupied property loans, as potentially is APM information on property prices. In these situations, testing and experimentation was undertaken to identify the auxiliary variable(s) which would be most useful for developing small area estimates. The closeness of the various relationships was analysed at the capital city and state balance scale, and the small area data source(s) which most closely aligned with the wealth component were chosen.

It is evident from Table 3.1 that the most common small area estimation technique adopted was the BARE with auxiliary data approach, with 13 of the 15 asset/liability categories being estimated using this approach. The fallback position, where no relevant auxiliary data was identified for a particular wealth component was to assume the average value of that wealth component was constant within capital cities and state balance categories. This is the simple BARE approach described by ABS (2006f). This approach was adopted for the 'other assets' category, and for investment and other loans. Each contributes less than 1 per cent of household net worth.

Table 3.1 Data sources and estimation techniques used to produce BITRE's small area estimates of household wealth

Wealth component	*Auxiliary data sources*	*Small area estimation technique*
Owner-occupied property assets	APM property sales price data, 2003–04 ABS Census home ownership and dwelling type data, 2001	3a (i) BARE with auxiliary data on value of asset
Other property assets	ATO rental income earners data, 2003–04	3a (iii) BARE with auxiliary data related to ownership of asset
Superannuation	ABS Census data on industry of employment, 2001 ABS average superannuation and annuity income, 2000–01 (Cat. 6524.0)	3a (ii) / 3b BARE with auxiliary data on income flows generated by asset and auxiliary data on population characteristics
Dwelling contents	ABS Census data on dwelling ownership by weekly household income, 2001	3b BARE with categorical auxiliary data on household characteristics
Net business assets	ABS Census number of self-employed by industry, 2001 ABS AFS average farm net worth, 1999–2000 ABS average non-farm business income, 2000–01 (Cat. 5675.0)	3a BARE with auxiliary data, where some of the auxiliary data relates directly to asset value, some to income and some to ownership
Interest earning assets (i.e. bank accounts, debentures and bonds)	ATO gross interest earnings, 2003–04	3a (ii) BARE with auxiliary data on income flows generated by asset
Shares and trusts	ATO dividend imputation credits, 2003–04	3a (ii) BARE with auxiliary data on income flows generated by asset
Vehicle assets	ABS Census proportion of households who own a motor vehicle, proportion of high income households and proportion of self-employed persons, 2001	3a (iii)/ 3b BARE with auxiliary data on ownership of asset and auxiliary data on population characteristics
Other assets	None	2. BARE
Owner-occupied property debts	ABS Census proportion of households who are currently purchasing their dwelling and amount of repayments, 2001	3a (ii/iii) BARE with auxiliary data on repayment flows generated by liability and on ownership of liability
Other property	ATO rental income earners and average net rental income data, 2003–04	3a (ii/iii) BARE with auxiliary data on repayment flows generated by liability and on ownership of liability
Study loans	ATO HECS debt repayment rate, 2003–04	3a (iii) BARE with auxiliary data related to ownership of liability
Credit cards	ABS Census proportion of households who are currently purchasing their dwelling, 2001	3b BARE with auxiliary data on household characteristics
Vehicle loans	ABS Census proportion of high income households, 2001 BITRE small area estimates of average vehicle assets, 2003–04	3b BARE with auxiliary data on household characteristics
Investment and other loans	None	2. BARE

Source: BITRE analysis.

Wealth-specific auxiliary data was available for 10 of the 15 wealth components. The components for which wealth-specific auxiliary data was available contributed 91 per cent of net worth, 91 per cent of assets and 88 per cent of liabilities. Dwelling contents is the only sizeable component of household wealth for which wealth specific auxiliary data was not available at a small area scale—it accounts for 9 per cent of household assets.

Only for owner-occupied property assets and agricultural business assets does the auxiliary data relate directly to the average value of the asset in each small area. The remaining auxiliary data relates to either the income or repayment flows generated by the asset or liability or ownership of the asset or liability.

For net business assets, agricultural and non-agricultural businesses were considered separately, due to the dominance of agricultural businesses in many Australian SLAs and the large difference in the average value of agricultural and non-agricultural businesses. Different auxiliary data sources were selected for each business type and then used to produce small area estimates of net business assets per household. Similarly, government superannuation and private superannuation were separately modelled.

The small area estimates of superannuation and vehicle assets draw on both wealth-specific auxiliary data and more general census-based auxiliary data about population characteristics.

Where small area wealth-specific information was not available, or had significant limitations, the small area estimation technique of BARE with auxiliary data on population structure (3b) was adopted. No reliable auxiliary data source relating to asset or liability values, income or repayment flows, or ownership, was identified for dwelling contents, credit cards or vehicle loans. Consequently, BITRE's small area estimates for these items rely on census-based auxiliary data on population characteristics. Since the quality of small area estimates is highly dependent on the availability of small area auxiliary data which is directly related to the target variable, the small area estimates developed using this approach will generally be of lesser quality.

Since understanding the relationship between regional wealth and regional income is one of the goals of this study, comprehensive measures of average income (e.g. real income per taxpayer, median household income) have not been used as auxiliary variables in developing the wealth estimates. This preserves the validity of the analysis of the relationship between wealth and income presented in Chapter 10.

The auxiliary data was generally available at an SLA scale, or in the case of ATO data could be readily concorded from the postcode scale to the SLA scale. The only two exceptions relate to the business assets component:

- Average non-farm business income was available at the SD scale.
- Average farm net worth was available for 42 regions, which generally corresponded to SDs or combinations of SDs, except in regional WA, where they corresponded to combinations of SSDs.

Further discussion of the small area estimation methodology is provided in Appendix A for two key wealth components:

- owner-occupied property assets
- interest earning assets (bank accounts, debentures and bonds).

This appendix illustrates, in a more detailed manner, the methods used to develop small area estimates of household wealth.

Statistical Local Areas

The small area estimates of household wealth have been produced at the SLA scale, using 2001 Australian Standard Geographical Classification (ASGC) boundaries.

The SLA is the base spatial unit within the ASGC and it is the smallest spatial unit available between censuses. Where incorporated local government bodies exist, SLAs are based on LGA boundaries. Unincorporated SLAs are defined for all other areas. Because LGAs vary widely in their population size, a single LGA is often disaggregated into a number of SLAs. SLAs can be readily aggregated to LGAs and a range of other spatial units.

There are about 1350 populated SLAs in Australia. However, due to restrictions in the scope of the SIH, BITRE was not able to produce wealth estimates for very remote SLAs or for discrete indigenous community SLAs. There were 1262 remaining SLAs for which BITRE produced household wealth estimates.

Some of these SLAs contain relatively few households, and the auxiliary data can be volatile or unreliable for SLAs with a low population base.[16] Because of these concerns about data quality, BITRE's wealth estimates are only being published for SLAs with 500 or more households. The analysis contained in Chapters 6 and 7 therefore focuses on the household wealth estimates for the 1135 in-scope SLAs which contain 500 or more households.[17] These SLAs account for about 99 per cent of Australian households.

Table 3.2 provides information on the number of in-scope SLAs for which wealth estimates have been produced in each state and territory. The SLAs are not evenly distributed across states and territories, with Queensland having more than double the number of SLAs of Victoria and NSW, despite its smaller population base. The average SLA size (in terms of households) is largest for NSW and Victoria, and smallest in the two territories.

16. For example, the Dundas shire in WA's south east had an estimated 438 households in 2003–04, but there were only six house sales in that period, creating a significant risk that the average property price could be heavily influenced by one or two unusual property sales.
17. Note that the maps in this information paper represent all SLAs, regardless of size.

Table 3.2 In-scope SLAs with more than 500 households by state and territory, 2003–04

State/territory	*Number of SLAs*	*Number of households (thousands)*	*Average number of households per SLA*
NSW	190	2 510.2	13 212
VIC	194	1 876.3	9 671
QLD	400	1 455.0	3 638
SA	107	615.1	5 749
WA	89	726.8	8 166
TAS	36	193.3	5 370
NT	38	49.3	1 297
ACT	81	119.2	1 472
Australia	1 135	7 545.2	6 648

Note: Excludes SLAs with fewer than 500 households in 2003–04. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on 2001 ASGC and BITRE *Household Wealth Database*.

Data quality issues

Aspects of data quality

The quality of the small area estimates produced in this study will depend on the quality of the input data and the quality of the estimation methods. There are three types of error which may impact upon small area estimates: sampling error, non-sampling error and model error.

Sampling error can be assessed using RSEs. In the SIH, the national estimate of average household net worth has an RSE of just 1.5 per cent, indicating 95 per cent confidence the true figure lies within 3 per cent of the survey estimate. Household net worth estimates have an RSE of 10 per cent or less for all capital city and state balance categories, except NT (13.8 per cent) and WA Balance (10.4 per cent). Estimates with RSEs of more than 25 per cent are of poor quality and should be used with caution, and estimates with RSEs of more than 50 per cent should not be used.

Non-sampling error is relevant to administrative and census based data sources as well as surveys. It arises from inaccuracies in collecting, recording and processing data. The contribution of non-sampling error is difficult to calculate directly, but can be assessed qualitatively. For each wealth component, BITRE has assessed the quality of auxiliary data sources and their alignment with SIH concepts and measures.

Good model based estimates may help to reduce sampling and non-sampling errors (ABS 2006f). Model error can be separated into model specification error (i.e. errors in the choice of model or the choice of auxiliary variables) and goodness of fit error (i.e. the extent to which the model does not fit the data). ABS (2006f, p79) notes that while 'more sophisticated models may give some improvements in quality, in practice it is the basics such as realistic choice of small area geography, adequate sample size and the quality and statistical relevance of the auxiliary data that will have the greatest bearing on the final quality of the small area estimates'.

Keeping these sources of error in mind, the following section outlines:

- the quality and conceptual relevance of the auxiliary data sources
- the sampling error of the SIH benchmarks
- the statistical alignment (goodness of fit) between the auxiliary data and the SIH benchmarks.

ABS (2006f) also points out that there is no single summary measure of the precision and accuracy of small area estimates and so the quality of small area estimates should be assessed against a suite of diagnostic measures. The following diagnostics are suggested:

- measures of bias
- checking model assumptions for mis-specification
- mapping residuals for spatial randomness
- coverage statistic
- prediction errors for small area estimates
- distribution of estimates
- additivity to broad area.

Unfortunately, most of these diagnostics are reliant on the availability of small area direct survey estimates as a comparison point, and so were not generally an option in this study. Instead BITRE has assessed the quality of the small area estimates using the following methods.

- Sensitivity analysis

  This involves testing the sensitivity of small area estimates to changes in model specification.

- Additivity error

  The degree to which small area estimates are adjusted by the benchmarking process provides a measure of the difference between the SIH data and the auxiliary data sources. Ideally a model would produce small area predictions which closely align with the capital city and state balance aggregates. ABS (2002) reports the benchmarking ratios as a means of communicating this aspect of data quality to users, and this practice has also been followed for the small area estimates of household wealth (see Appendix B).

- Comparison to SIH wealth estimates for other geographies

  BITRE's small area estimates were developed using the SIH capital city and state balance disaggregation, but did not made use of other available spatial information, such as remoteness classes. The small area estimates can be aggregated to state remoteness classes using population-weighted concordances, and the extent to which they align with the direct remoteness class estimates from the SIH provides an independent assessment of their quality and their unbiasedness.[18]

18. Small area estimates are unbiased if a regression of the direct survey estimates against the small area estimates produces a regression line with a constant of zero and a slope of one (see ABS 2005b for a discussion of testing for unbiasedness).

As the major cities class is reasonably similar to the capital cities category used in benchmarking, the real test is whether the small area estimates highlight the same patterns as the SIH for the inner regional, outer regional and remote classes.

- Comparison to external data sources

  There are a range of data sources which have not been used in this project, but with which we would expect wealth to be correlated and so provide a means of validating the small area wealth estimates. Chapter 10 presents an in-depth analysis of the extent to which the small area estimates of household wealth are correlated with income and the SEIFA indices at a small area scale.

Another important method for assessing data quality is to seek feedback from experts. BITRE invites feedback from researchers and regional development practitioners on the quality and validity of the regional estimates of household wealth. The feedback received from users on the 2003–04 *Household Wealth Database* will be used to evaluate its strengths and weaknesses and the demand for updated small area estimates of wealth.

Quality assessment

It was previously noted that there is no single summary measure of data quality available for small area estimates. ABS (2002) provides a graded assessment of quality for its estimates of household wealth and a similar approach has been adopted here.

A fundamental determinant of the quality of the small area estimates is the quality and relevance of the auxiliary data source. BITRE's small area estimates of household wealth have been built up from the individual asset and liability components.

Table 3.3 details the rating scale used to assess the quality and relevance of the auxiliary data for each asset and liability component. Consider BITRE's small area estimates of average net worth. The single largest component of household wealth, namely owner-occupied property assets, receives a rating of A on this scale, because the auxiliary data relates specifically to the average value of owner-occupied dwellings. Wealth-specific auxiliary data was available at the small area scale for wealth components amounting to more than 90 per cent of net worth. Therefore, in an overall sense, a rating of B would be most appropriate for the small area estimates of average net worth.

Table 3.3 Rating scale used to assess quality and relevance of auxiliary data

Rating	*Description*
A	The small area estimates are based on very good quality auxiliary data and the auxiliary data relates specifically to the average value of the asset or liability.
B	The small area estimates are based on good quality auxiliary data and the auxiliary data relates specifically to income or repayment flows or ownership of the asset or liability.
C	The small area estimates are based on auxiliary data from a reliable source, but the auxiliary data relates to relevant population characteristics rather than specifically to the asset or liability.
D	Although the small area estimates have drawn on auxiliary data, their accuracy is questionable, and the small area estimates should be used with caution.
E	The small area estimates for this component do not make use of auxiliary data. The small area estimates are, in isolation, of poor quality, and should not be used.

Source: BITRE analysis.

The second column of Table 3.4 presents the ratings for each asset and liability component based on the quality and relevance of the auxiliary data sources. Most wealth components receive a rating of B. The small area estimates of dwelling contents, vehicle loans and credit cards receive a C rating, while the small area estimates of 'other assets' and 'investment and other loans' are of no practical value in their own right, but do make a minor contribution to aggregate measures (e.g. total assets, net worth).

Another important aspect of quality relates to the reliability of the benchmark data. This can readily be assessed by referring to the SIH RSEs for household wealth and its components at the capital city and state balance scale. ABS advise that estimates with RSEs of greater than 50 per cent are considered too unreliable for general use, and estimates with RSEs of between 25 per cent and 50 per cent should be used with caution (ABS 2006b).

Table 3.5 details the rating scale used to assess the quality of the SIH benchmark data for each asset and liability component. On this rating scale, the benchmark estimates of average net worth are rated B because RSEs are 10 per cent or less for all capital city and state balance categories, except NT (13.8 per cent) and WA Balance (10.4 per cent).

Table 3.4 Overview of quality assessments for wealth components, 2003–04

Wealth component	*Quality and relevance of small area auxiliary data*	*Quality of SIH benchmark data*	*Degree of alignment at capital city and state balance scale*	*Remoteness class estimates*	
				Proportion within 99 per cent confidence interval (per cent)	*Biased or unbiased*
Net worth	B*	B	A	94	Unbiased
Owner-occupied property assets	A	A	A	100	Unbiased
Net business assets	A	D	B	100	Unbiased
Vehicle assets	B	A	A	100	Unbiased
Interest earning assets	B	B	B	100	Unbiased
Outstanding loans on owner-occupied property	B	B	A	100	Unbiased
Study loans	B	C	B	100	Unbiased
Other property assets	B	B	A	88	Unbiased
Other property loans	B	C	B	100	Unbiased
Shares and trusts	B	C	B	94	Unbiased
Superannuation	B	B	A	100	Unbiased
Vehicle loans	C	B	A	100	Unbiased
Credit card debt	C	B	B	100	Unbiased
Dwelling contents	C	A	C	100	Unbiased
Investment and other loans	E	D	na	94	Unbiased
Other assets	E	E	na	94	Unbiased

Notes: Details of the rating scales are provided in Tables 3.3,3.5 and 3.6.
* Wealth-specific auxiliary data was available at the small area scale for wealth components amounting to more than 90 per cent of net worth. The rating scale provides for a rating of A or B when reliable wealth-specific auxiliary data is available, therefore a rating of B was judged to be the most appropriate for net worth as a whole.

Source: BITRE analysis.

Table 3.5 Rating scale used to assess quality and relevance of *Survey of Income and Housing* benchmark estimates

Rating	*Description*
A	All capital city and state balance estimates have RSEs of 10 per cent or less.
B	All capital city and state balance estimates have RSEs of 25 per cent or less.
C	All capital city and state balance estimates have RSEs of 50 per cent or less, and no more than two have RSEs of more than 25 per cent.
D	All capital city and state balance estimates have RSEs of 50 per cent or less, but more than two have RSEs of more than 25 per cent.
E	At least one of the capital city and state balance estimates has an RSE of more than 50 per cent.

Source: BITRE analysis.

The third column of Table 3.4 rates the quality of the SIH benchmarks for each of the individual asset and liability components. Owner-occupied property assets, dwelling contents and vehicle assets receive the highest rating of A. A further six components receive a rating of B. However, for net business assets, investment and other loans, and other assets, the SIH benchmark data receives a less than satisfactory rating of D or E. The latter two wealth components make a negligible contribution to net worth so the lack of reliability of the benchmark data is of little concern. The high RSEs for net business assets have greater consequence.

The SIH estimates of net business assets generally have high RSEs due to the small proportion of households who own business assets, and the range in value of these businesses. Several of the capital cities have SIH estimates with RSEs of between 25 per cent and 50 per cent (Melbourne, Brisbane, Adelaide, Hobart and Canberra). The potential impact on the small area estimates of net worth is limited by the fact that net business assets contribute less than 6 per cent of net worth in each of these capital cities. However, regional SA, regional Tasmania and the NT also have SIH estimates with RSEs of between 25 and 50 per cent, and the potential impact is greater. This is more of an issue for regional SA where net business assets contribute 23 per cent of net worth, than for NT (16 per cent) or regional Tasmania (9 per cent).

It is important to recognise that a high RSE does not necessarily mean an estimate will be inaccurate. The SIH estimates of net business assets at the capital city and state balance scale were extremely well aligned with BITRE's estimates based on the auxiliary data sources. The extremely high correlation of 94 per cent provides evidence in support of the overall validity of the SIH estimates of net business assets, despite their generally high RSEs.

Nevertheless, the small area estimates of net business assets should be used with caution, due to the generally high RSEs of the SIH benchmarks. The estimates have been reported because of the important contribution that business assets make to net worth in many rural areas. Furthermore, making the small area estimates of net business assets available in the database provides users with the flexibility to include or exclude this item from calculations of average net worth, according to preference.

There are three wealth components which receive a rating of C in terms of the quality of the SIH benchmark data: study loans, other property loans, and shares and trusts. For each of these, two of the fourteen capital city and state balance benchmarks have RSEs between 25 and 50 per cent:

- other property loans for regional SA and regional Tasmania

- study loans for regional SA and regional WA
- shares and trusts for regional WA and NT.

For these wealth components, the small area estimates within the abovementioned regions should be used with caution. The potential impact of these high RSEs on the small area estimates of net worth is limited because the components contribute less than 5 per cent of net worth in the relevant regions. The only exception is for regional WA, where share and trust assets account for 9 per cent of net worth.

Another factor relevant to assessing the quality of the small area estimates is the degree of empirical alignment between the SIH benchmarks and the small area auxiliary data sources at the capital city and state balance scale. This can be assessed using correlation coefficients or benchmark ratios.[19] Table 3.6 details the rating scale used to assess the degree of alignment at the capital city and state balance scale.

Table 3.6 Rating scale used to assess alignment between survey benchmarks and small area data sources at the capital city and state balance scale

Rating	*Description*
A	Correlation exceeds 80 per cent and at least 90 per cent of benchmarking ratios lie between 0.80 and 1.25.
B	Correlation exceeds 70 per cent *and* at least 80 per cent of benchmarking ratios lie between 0.67 and 1.5.
C	Correlation exceeds 70 per cent *or* at least 80 per cent of benchmarking ratios lie between 0.67 and 1.5.
D	Correlation is below 70 per cent and more than 20 per cent of benchmarking ratios lie outside the range of 0.67 to 1.5.
na	The small area estimates do not make use of any auxiliary data.

Source: BITRE analysis.

BITRE's unbenchmarked small area estimates of average net worth were extremely closely linked to the SIH benchmark estimates, with a correlation of 95 per cent at the capital city and state balance scale. The benchmark ratios were between 0.94 and 1.11 for all capital city and state balance categories other than the NT (benchmark ratio = 1.21). Thus, the SIH and auxiliary data sources are very well aligned overall. The lesser alignment for the NT may be related to the SIH RSE of 14 per cent for average net worth in the NT.

From Table 3.4, it is clear that the auxiliary data is particularly well aligned with the SIH benchmarks for owner-occupied property assets and loans, vehicle assets and loans, other property assets and superannuation. The degree of alignment is more limited for dwelling contents, a result which is largely attributable to the lack of regional variation in the SIH benchmarks.

While the SIH benchmarks and the auxiliary data sources are generally well aligned, for some wealth components in some regions there is a notable lack of alignment. Further details of benchmark ratios are provided in Appendix B.

BITRE's small area estimates can be aggregated to remoteness classes, and the extent to which they align with the direct remoteness class estimates from the SIH provides an independent assessment of their quality and their unbiasedness. Table 3.4 summarises the results of this analysis. The small area estimates are statistically

19. A benchmark ratio is simply the ratio of the SIH benchmark estimate for a broad area to the estimate based on the auxiliary data sources for that broad area.

unbiased at the remoteness class scale for all of the wealth components and for net worth as a whole. Ninety eight per cent of the state remoteness class estimates based on BITRE's small area estimates were within the 99 per cent confidence interval of the SIH estimate. This is roughly what would be expected and provides support for the quality of BITRE's small area estimates. However, there were a few statistically significant differences between the SIH estimates and BITRE's small area estimates at the remoteness class scale:

- BITRE's small area estimates of net worth are significantly higher than the SIH estimates for outer regional, remote and very remote Victoria and this holds true across a range of different wealth components. The auxiliary data sources consistently imply that the 2003–04 SIH underestimates net worth for outer regional, remote and very remote Victoria.[20]
- For other property assets, BITRE's small area estimates are significantly higher than the SIH estimates in the outer regional, remote and very remote areas of Victoria and Queensland. The ATO auxiliary data identifies slightly below average proportions of taxpayers earning rental income in these regions, while the SIH identified these two regions as having extremely low holdings of other property assets.
- The BITRE and SIH estimates of share and trust assets per household are significantly different for inner regional WA. The previously noted high RSE for the SIH estimate of average share and trust assets in regional WA is the most probable reason for this inconsistency.

Clearly, the quality of the small area estimates can be assessed against a wide range of criteria, but what conclusions can be drawn about the overall quality of BITRE's small area estimates of household wealth? According to ABS (2006f), the overall quality of small area estimates is dependent on three basic elements:

- Quality and statistical relevance of the auxiliary data

  Quality is highly dependent on the availability of small area auxiliary data which is closely related to the target variable. BITRE has access to wealth-specific auxiliary data for the major components of household wealth—these components contribute 91 per cent of net worth. Only for owner-occupied property assets and agricultural business assets does the auxiliary data relate directly to the average value of the asset in each small area. Most of the auxiliary data relates to either the income or repayment flows or ownership of the asset or liability.

- Adequate sample size

  All of the benchmark estimates of net worth are based on adequately sized samples of more than 350. The small area data sources are census and administrative collections so sample size is not a relevant issue.

- A realistic choice of small area geography

  This choice was made taking account of reliability issues. ABS (2005b) notes that if the variable of interest is a reasonably common characteristic of the population

20. According to the SIH, net worth per household increased by 45 per cent for outer regional, remote and very remote Victoria between 2003–04 and 2005–06, compared to 20 per cent for Australia. This, too, could reflect the 2003–04 SIH data underestimating wealth in the region.

(e.g. more than 10 per cent) it may be able to be estimated at a reasonably fine level of geography such as for SLAs. Nearly all households have some amount of wealth, and the key wealth components (e.g. homes, superannuation, bank accounts, shares) are all held by at least 30 per cent of households. It follows that household wealth estimates should be able to be developed at a reasonably fine level of geography. Ideally, wealth estimates would have been produced for all SLAs in Australia, but data reliability considerations mean that wealth estimates are only being published for SLAs with more than 500 households.

Table 3.7 provides an overall assessment of the quality of the small area estimates for each wealth component. The small area estimates of net worth per household have been assessed as being of good quality overall, because they are based on relevant and reliable auxiliary data, the SIH benchmarks have generally low RSEs, and the SIH and auxiliary data are very well aligned. Mortgages, vehicle assets, superannuation, interest earning assets and other property assets received the same rating. The small area estimates of owner-occupied property assets received the best overall quality assessment.

As previously noted, the small area estimates of 'other assets' and 'investment and other loans' are of poor quality. The remaining wealth components have been rated as being of only satisfactory quality because at least one of the following conditions held:

- Wealth-specific auxiliary data was not available.
- SIH RSEs exceeded 25 per cent for one or more of the capital city and state balance regions.
- The SIH and auxiliary data sources were poorly aligned for one or more of the capital city and state balance regions.

Small area estimates have been published and analysed for wealth components rated A or B, as well as for those wealth components rated C which make a significant contribution to net worth of more than 5 per cent. The small area estimates of dwelling contents, shares and trusts, and net business assets meet this criterion, but should be used with some care.

Table 3.7 Overall assessment of quality of small area estimates by wealth component, 2003–04

Quality of small area estimates	*Wealth component*
A. Very good quality	Owner-occupied property assets
B. Good quality	Net worth Vehicle assets Outstanding loans on owner-occupied property Interest earning assets Superannuation Other property assets
C. Satisfactory quality (i.e. quality assessment identified some issues)	Net business assets Study loans Shares and trusts Other property loans Vehicle loans Credit card debt Dwelling contents
E. Poor quality	Other assets Investment and other loans

Source: BITRE analysis.

There are some further factors, related to the characteristics of the small areas themselves, that impact on the quality of the estimates:

- The auxiliary data can be volatile or unreliable for SLAs with a low population base. This is the reason that net worth estimates have not been analysed or published for SLAs with fewer than 500 households. There remains a generally greater risk that the auxiliary data will be unreliable for an SLA with 600 households than for one with 60 000 households. For example, while the Yilgarn SLA contains 604 households, only eight house sales took place in 2003–04, creating considerable potential for a single unrepresentative sale to unduly influence the average. There is no such risk for the Penrith SLA which had 59 300 households and 2842 house sales in 2003–04.
- The small area estimation process is based on identifying overall relationships between variables at a broad area scale, and so does not pick up the exceptions to the overall pattern. An implication is that the small area estimates may be misleading for SLAs which are very distinct or unusual in nature. Examples include SLAs dominated by an institution, such as a defence force base (e.g. City Remainder in Darwin, Garbutt in Townsville), a university (e.g. Douglas in Townsville) or a prison and hospital complex (e.g. Wacol, south west of Brisbane).
- Small area estimates will be less reliable for regions that experienced rapid change between 2001 and 2003–04, than those which experienced slow or moderate growth. This is because a fair amount of the auxiliary data relates to 2001, and for regions which have experienced very rapid change, the 2001 auxiliary data will no longer provide an accurate reflection of the area. The most extreme example is the 'Gungahlin-Hall SSD Balance' SLA which grew fifty-fold between 2001 and 2003–04.

Summary

The 2003–04 SIH provides benchmark estimates of household wealth, and its components, at the capital city and state balance scale. A range of administrative and census data sources provide information on regional variations in different components of wealth, including APM house price statistics, the 2001 *Census of Population and Housing* and the ATO's *Taxation Statistics*. BITRE has used small area estimation techniques to integrate these auxiliary data sources with the SIH benchmark data to produce detailed regional estimates of household wealth and its components.

The quality of the small area estimates was assessed and BITRE's small area estimates of net worth for SLAs with more than 500 households were generally found to be of good quality: they make use of the most relevant data sources available at this time and the methods used have been chosen after testing alternatives. Where specific data quality concerns have been identified for a small area estimate, they have been flagged in BITRE's *Household Wealth Database*.

Key messages

The ABS' 2003–04 SIH provides reliable estimates of household wealth at the capital city and state balance scale which provide benchmarks for this study.

The key contribution of this study is the disaggregation of the SIH estimates of wealth to a detailed regional scale using small area estimation techniques.

The main small area estimation technique adopted is broad area ratio estimation with auxiliary data.

The key small area data sources are APM data on property prices, ATO Taxation Statistics reports and the ABS' Census of Population and Housing.

Very remote areas and discrete indigenous communities are excluded from the scope of the study.

Estimates have been published for 1135 Australian SLAs representing 99 per cent of Australian households.

BITRE has assessed the quality of the small area estimates using a range of criteria. The small area estimates of net worth per household were found to be of generally good quality for SLAs with more than 500 households.

The availability of wealth-specific data at the small area scale is the key determinant of the quality of the small area estimates of household wealth. BITRE has access to wealth-specific auxiliary data for the major components of wealth, which together contribute 91 per cent of net worth.

The small area estimates of owner-occupied property assets are of higher quality than the estimates for other wealth components.

BITRE invites feedback from users about the validity of these new regional estimates of household wealth.

Chapter 4 Household wealth in Australia in 2003–04

Chapter 2 provided an overview of what the previous literature has said about household wealth in Australia. This chapter provides a more detailed description of what the 2003–04 SIH says about household wealth at the national scale. With access to unit record data, BITRE is also able to investigate the importance of sociodemographic characteristics in influencing or predicting household wealth.

Composition of household wealth

Net worth consists of a number of different components, grouped into assets and debts. Table 4.1 provides an overview of household wealth estimates from the 2003–04 SIH. The ABS' estimate of average household wealth was $467 600, consisting of $537 100 of assets and $69 400 in liabilities. Median household net worth was much lower at $294 682 (ABS 2006b). For Australian households, the ratio of debts to assets is 12.9 per cent. Non-financial assets account for roughly three-quarters of all assets.

Of most importance are property assets since 70 per cent of households own their home (either outright or with a mortgage). For most of these households, the dwelling in which they live is their main asset. Property assets account for 60 per cent of assets, while property debts account for 86 per cent of liabilities. Net property assets contribute 56 per cent of household net worth, with the net value of property averaging $260 000 per household. About 80 per cent of net property assets were held in the form of owner-occupied property—the remaining 20 per cent includes holiday or second homes, homes in construction and residential or non-residential property for rent.

The second largest contributor to household net worth is balances in superannuation funds, which account for 12 per cent of assets and average $63 500 per household. Dwelling contents are also reasonably important, accounting for 9 per cent of assets ($47 400 on average). All households are assumed to have a level of contents in the SIH, so this value forms the basis of all net worth estimates.

The average net value of businesses (incorporated and unincorporated) was $38 400, which is equivalent to 8 per cent of household wealth. Incorporated businesses were somewhat more important than unincorporated businesses. However, for the 10.6 per cent of Australians who held business assets, this was a significant component of their wealth holdings with an average of $360 000.

It is worth noting that only 68 per cent of households are reported to own bank accounts. This result is probably due to the phrasing of the survey question, where many respondents do not see their day-to-day accounts as financial investments so did not include the amount of these accounts. As such, bank account values should be treated with caution.

Table 4.1 Components of household wealth, Australia, 2003–04

Type	*Mean ($ thousands)*	*Proportion of total (per cent)*	*Ownership (per cent)*	*Contributor mean ($ thousands)*	*Gini coefficient*
Assets					
Owner-occupied property	249.0	46.4	70.1	355.2	0.62
Other property assets	70.8	13.2	18.9	375.3	0.92
Superannuation	63.5	11.8	73.0	86.9	0.77
Dwelling contents	47.4	8.8	100.0	47.4	0.46
Net business assets	38.4	7.2	10.6	362.0	0.98
Bank accounts	21.1	3.9	68.1[b]	31.0	0.86
Shares	18.2	3.4	31.0	58.7	0.95
Vehicles	17.2	3.2	88.5	19.5	0.59
Other assets[a]	11.4	2.1	nr	nr	nr
All non-financial assets	400.6	74.6	100.0	400.6	0.75
All financial assets	136.5	25.4	92.3	147.9	0.60
Total assets	537.1	100.0	100.0	537.1	0.60
Debts					
Owner-occupied property	40.0	57.6	32.8	122.0	0.83
Other property	19.9	28.6	10.4	190.7	0.95
Study loans	1.2	1.7	10.9	11.1	0.95
Credit cards	1.9	2.7	60.7	3.1	0.86
Vehicle loans	2.7	3.9	17.8	15.0	0.91
Investment loans	2.4	3.4	2.3	102.1	0.99
Other loans	1.5	2.1	11.9	12.2	0.96
Total debts	69.4	100.0	75.2	92.4	0.78
Selected net assets					
Owner-occupied property	209.0	44.7	70.1	298.3	0.65
Other property	50.9	10.9	18.8	270.6	0.94
Vehicles	14.5	3.1	88.2	16.5	0.64
Net worth	467.6	100.0	100.0	467.6	0.62

Notes: a. Other assets include other financial investments, children's assets, loans to persons and assets not elsewhere classified.

b. Derived from question 'Do you currently have any of these financial investments? Deposit at a bank or other financial institution (includes savings, cheque account, term deposits etc)'. HILDA finds that 97 per cent of households have a bank account, so it appears the ABS question has unintentionally excluded households who have a bank account for transaction purposes. Consequently, the average value of bank accounts is probably biased upwards.

nr not relevant—values are not calculated due to diversity of this group.

Source: BITRE analysis of ABS SIH 2003–04 data.

Investigating which wealth components are related to net worth can give insights into what drives household wealth. Table 4.2 outlines selected components that are significantly correlated with net worth. The annual income of the household was moderately correlated with wealth (0.41). The closest link with wealth occurred for the net value of owner-occupied property (0.71). Net business assets (0.63), net other property assets (0.57), superannuation (0.51), shares (0.47) and contents (0.45) were all correlated more strongly than income.

Table 4.2 Correlation of wealth components with net worth, Australia, 2003–04

Component	*Correlation*
Income	0.41
Net value of home	0.71
Gross value of home	0.68
Net business assets	0.63
Net other property assets	0.57
Superannuation	0.51
Shares	0.47
Contents	0.45
Net vehicle assets	0.39
Value of bank accounts	0.34
Trusts	0.29

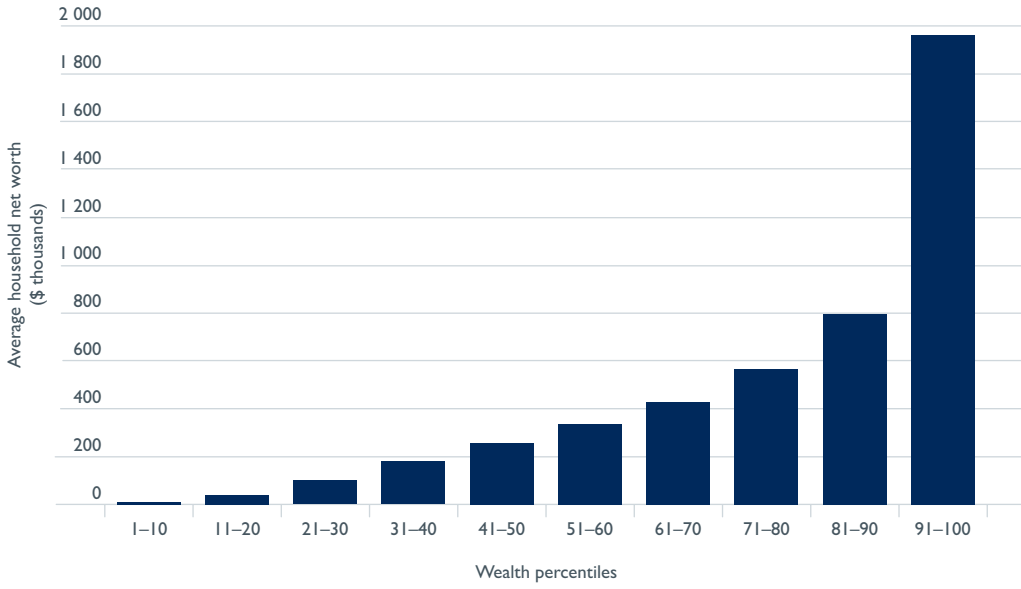
Source: BITRE analysis of ABS SIH 2003–04 data.

Distribution of household wealth

There are large differences in wealth holdings across households. The composition of wealth differs across demographic and wealth groupings. The wealthiest don't just have higher levels of assets, they have a different portfolio than those who are less wealthy.

Figure 4.1 illustrates the distribution of wealth across Australian households by wealth decile. The wealthiest 10 per cent of households have an average net worth

Figure 4.1 Distribution of household wealth, Australia, 2003–04



Source: BITRE analysis of ABS SIH 2003–04 data.

of more than $1.9 million,[21] while the least wealthy 10 per cent have an average net worth of $8600. The bottom 20 per cent of households combined own 1 per cent of total household wealth, while the wealthiest 20 per cent own 59 per cent of total household wealth.

The SIH shows that less than 1 per cent of households have a negative net worth, while 17 per cent have a net worth of less than $50 000. Nearly 10 per cent of households have a net worth greater than $1 million.

Table 4.3 shows that some components of household wealth are more equally distributed than others. The wealthiest 10 per cent of households own 42 per cent of all wealth and 83 per cent of net business assets, but only 15 per cent of credit card debt and 22 per cent of other debt. Most asset types are highly concentrated amongst the more wealthy households.

There are also other compositional differences in the wealth holdings of each wealth decile. Table 4.4 shows the mean assets, debts and net worth of households by wealth decile. One way of measuring the relationship between assets and debts is by a simple ratio. The debt-to-asset ratio shows the proportion of a region's assets that are financed through debt, and therefore provides an indication of the extent to which households are highly leveraged. The least wealthy 10 per cent of households have a very high ratio of 50 per cent, whereas the wealthiest 10 per cent have a very low ratio at only 6 per cent. Only the top 30 per cent of households have a ratio equal to or lower than the national average.

The debt-to-asset ratio generally trends downwards as you move up the wealth deciles, with one exception—the second lowest decile. To try and understand this difference we turned to the individual wealth components. The lowest wealth decile has reasonably high levels of investment property ownership. It appears there is a diverse range of wealth profiles in the bottom decile, from those with a low asset base, to those who have used their asset base to leverage high levels of debt. This is not the case in the second lowest decile, where very few households have high levels of assets, and hence have a much lower capacity to borrow heavily.

One indicator of the diversity or concentration of the wealth portfolio is the proportion of total assets that is due to owner-occupied housing. Only a very small proportion of the bottom two wealth deciles own their own home. The wealth portfolio is most heavily concentrated in the home for the middle (fourth, fifth and sixth) wealth deciles. The wealth portfolio becomes more diverse for the top 30 per cent of households as these households acquire other forms of assets such as shares.

Another interesting feature is the distribution of liquid assets. Liquid assets are assets that are held as, or can readily be turned into cash, and include bank accounts and shares. These assets provide an important resource when a household experiences a crisis, from replacing fridges to sudden ill health. The highest 10 per cent of households have the highest level of liquid assets, with 11 per cent of assets being liquid. It is the middle percentiles, from 31 to 60 per cent, who held the lowest proportion of assets in liquid form, at 4 per cent.

21. Sample survey based measures of household wealth typically underrepresent the most wealthy households (Headey, Marks and Wooden 2005), meaning that these results are likely to provide a conservative picture of the extent of inequality in holdings of household wealth.

Table 4.3 Proportion of wealth component held by each wealth decile, Australia, 2003–04

Wealth percentiles	*Super-annuation*	*Contents*	*Bank accounts*	*Shares and trusts*	*Other financial assets*[a.]	*Other assets*[b.]	*Vehicles (net)*	*Business assets (net)*	*Owner-occupied property (net)*	*Other property (net)*	*Credit card debts*	*Study loans*	*Other debts*[c.]	*Household net worth*
1–10	0	2	0	0	0	0	1	0	0	0	5	19	3	0
11–20	1	5	1	0	0	1	3	0	0	0	8	14	3	1
21–30	3	8	4	1	0	3	6	0	1	1	10	13	5	2
31–40	4	8	4	1	2	4	7	1	4	2	10	8	6	4
41–50	4	10	5	1	2	4	9	1	7	2	11	8	5	5
51–60	6	10	6	2	3	4	10	1	9	3	10	7	8	7
61–70	8	11	10	4	17	5	11	2	12	4	9	7	10	9
71–80	13	12	11	6	23	11	13	4	15	8	11	7	11	12
81–90	21	15	15	14	14	19	16	8	19	15	12	8	12	17
91–100	39	19	44	69	38	49	23	83	32	65	15	7	37	42
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Notes: a. Includes debentures and bonds and other financial investments.
b. Includes children's assets, loans to other people and assets not elsewhere classified.
c. Includes principal outstanding on investment loans and other loans.

Source: BITRE analysis of ABS SIH 2003–04 data.

Table 4.4 Selected measures of wealth by wealth decile, Australia, 2003–04

Wealth percentile	*Mean household net worth ($ thousands)*	*Mean assets ($ thousands)*	*Mean debts ($ thousands)*	*Debt-to-asset ratio (per cent)*	*Home assets as proportion of assets (per cent)*	*Proportion owning home (with or without mortgage) (per cent)*	*Liquid asset share (per cent)*
1–10	8.6	17.1	8.5	50	4	2	6
11–20	39.8	54.5	14.7	27	13	7	7
21–30	100.1	153.6	53.5	35	40	43	6
31–40	179.8	257.8	78.1	30	57	81	4
41–50	256.6	342.1	85.6	25	61	91	4
51–60	334.6	419.2	84.6	20	61	93	4
61–70	429.7	509.0	79.3	16	60	95	6
71–80	566.4	653.4	87.0	13	55	96	6
81–90	796.8	883.4	86.6	10	50	96	7
91–100	1962.4	2079.8	117.4	6	34	97	11
Total	467.6	537.1	69.5	13	46	70	7

Note: Bank accounts, debentures, bonds and shares are defined as liquid assets.
Source: BITRE analysis of ABS SIH 2003–04 data.

To understand some of these differences, an analysis of household characteristics was conducted for each wealth decile. Within each wealth decile, there is a reasonable level of diversity. The average age of the reference person ranges from 41 in the lower three deciles to 56 in the last decile. The national average age is 49.[22] The average number of employed persons in the household increases across the deciles, from 0.6 people in the bottom decile to 1.5 persons in the top decile. The number of people aged over 15 also increases from 1.5 persons to 2.4 persons.

Some of the greatest differences are seen for the lifecycle stage of the household (see Table 4.5). There are some clear groupings. Firstly, those at the earlier stages of the lifecycle (such as couples under 35 and couples with young children) tend to predominate in the lower-to-middle wealth deciles. This reflects the relationship between wealth and age. Three-quarters of all couples under 35 without children are in the lower half of the wealth distribution.

As the couples progress through the stages of the lifecycle, they accumulate more wealth and move into the higher deciles. More than three-quarters of all couples with non-dependent children living in the household lie in the top half of the wealth distribution, and 43 per cent of all couple only households with a reference person aged 55 to 64 lie in the top two deciles.

There is a somewhat different picture for single persons. Around two-thirds of all single people under 35 and single parents lie in the bottom 30 per cent of the wealth distribution. Single persons over 65 fare somewhat better with about half lying in the middle four deciles. This is not surprising, as couples have greater capacity to accumulate wealth and larger households achieve economies of scale over household costs and debts. Household wealth measures can be equivalised to account for different household sizes. Many previous studies have taken this approach (Creedy and Tan 2007, ABS 2006b) and Chapter 9 assesses the impact of equivalising BITRE's small area estimates of household wealth.

22. The average age is calculated from the survey reference person. Persons under the age of 15 are not in scope of this survey, so the average age is not a true reflection of the general population.

Table 4.5 Proportion of households in each wealth decile by lifecycle stage, Australia, 2003–04

Wealth decile	*Couple reference under 35*	*Couple with children under 5*	*Couple with children 5–14*	*Couple with children 15–24*	*Couple with dependents and non-dependents*	*Couple with non-dependent children*	*Couple only reference 55–64*	*Couple only reference 65+*	*Single person under 35*	*Single parent*	*Single person over 65*
1–10	10	7	5	2	2	1	1	4	34	26	11
11–20	17	9	7	4	5	4	3	4	23	24	9
21–30	18	12	10	6	6	4	5	4	21	15	7
31–40	15	15	12	7	7	5	5	8	9	11	12
41–50	16	11	10	9	11	8	6	11	6	6	14
51–60	8	15	12	12	16	9	9	11	4	7	10
61–70	7	11	13	11	13	14	12	12	2	4	12
71–80	4	9	11	16	12	17	16	14	1	4	9
81–90	4	7	11	18	12	20	18	15	1	3	7
91–100	2	4	8	16	16	18	25	18	0	1	8
Total	100	100	100	100	100	100	100	100	100	100	100

Source: BITRE analysis of ABS SIH 2003–04 data.

The Gini coefficient provides a measure of how equally a variable, such as net worth, is distributed across the population. How the Gini coefficient works is outlined in Box 4.1. In summary, a value of zero means that the variable is evenly distributed while a value of one means that one person (or a very small group of people) owns all of the assets/debt. The Gini coefficient for each type of asset or debt is outlined in Table 4.1.

Box 4.1 The Gini coefficient[23]

The Gini coefficient is widely used as the principal summary measure of the distribution of income and wealth. The coefficient is used to compare distributions of income or wealth, across points in time or across items. The coefficient can also be used as an absolute measure of inequality that has a social welfare implication.

The Gini coefficient ranges from zero to one, with zero representing perfect equality and one representing inequality to the extent that one person owns all of the assets (or debts).

The distribution of the chosen variable can be seen by charting the cumulative proportion of the value. The curve created is known as the Lorenz curve. The Gini coefficient is calculated by measuring the difference between the diagonal line, marking perfect equality, and the Lorenz curve. As an example, the following figures show the Lorenz curves for dwelling contents (Figure A) and shares and trusts (Figure B). For these figures, the Lorenz curve is calculated on the average value across SLAs, so the difference in the distribution is smaller than if the curve had been calculated across households. However, the principle still holds.

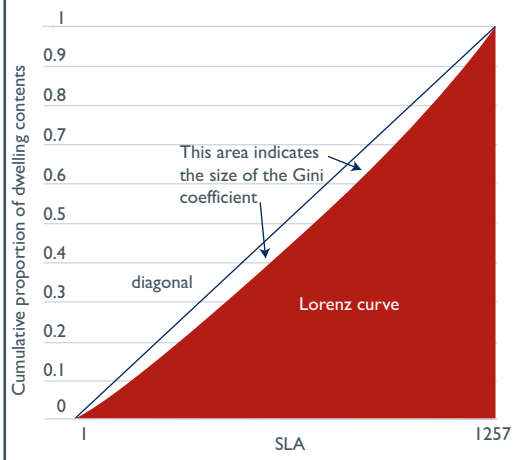


Figure A

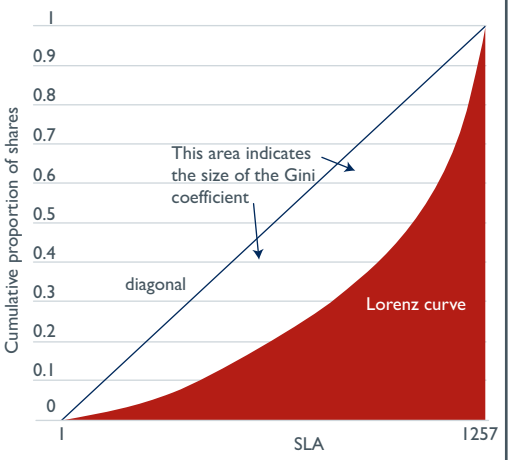


Figure B

Source: BITRE analysis of ABS SIH 2003–04 data.

Figure A shows that dwelling contents are fairly evenly distributed as there is little gap between the diagonal and the Lorenz curve. In the SIH everyone is assumed to have some contents, and the distribution of the value of contents is relatively tight. Figure B shows a much less equal distribution. Across SLAs the Gini coefficient for dwelling contents is 0.07. For shares and trusts, the Gini coefficient is much higher at 0.45, showing the larger gap between the diagonal and the Lorenz curve.

23. Much of this information is drawn from Atkinson (1975) and Xu (2003)

It is clear that there is a far from even distribution of different asset and debt types. Contents, which everyone is assumed to have some level of, has the lowest Gini coefficient (0.46). The asset with the highest Gini coefficient is net business assets (0.98), followed by shares (0.95). The debts have a consistently higher level of inequality, showing their lower ownership rates and higher variability. The debt category with the highest Gini coefficient is investment loans (0.99), while the lowest is owner-occupied property loans (0.83).

The Gini coefficient for net worth (0.62) is much higher than for annual income (0.49). Thus wealth is much more unevenly distributed across households than income is. This is probably because wealth is accumulated over time, and rises much more consistently with age than income does.

Sociodemographic characteristics

Chapter 2 showed that sociodemographic characteristics influence levels of household wealth. This section presents evidence of how selected household characteristics relate to wealth using the SIH. Any link between sociodemographic characteristics and net worth could possibly influence the distribution of household wealth across Australia's regions.

This analysis begins by individually looking at some of the factors that influence household wealth. By accessing the unit record file, a multivariate regression analysis can also be conducted. In this way the influence and interaction of many variables can be assessed together.

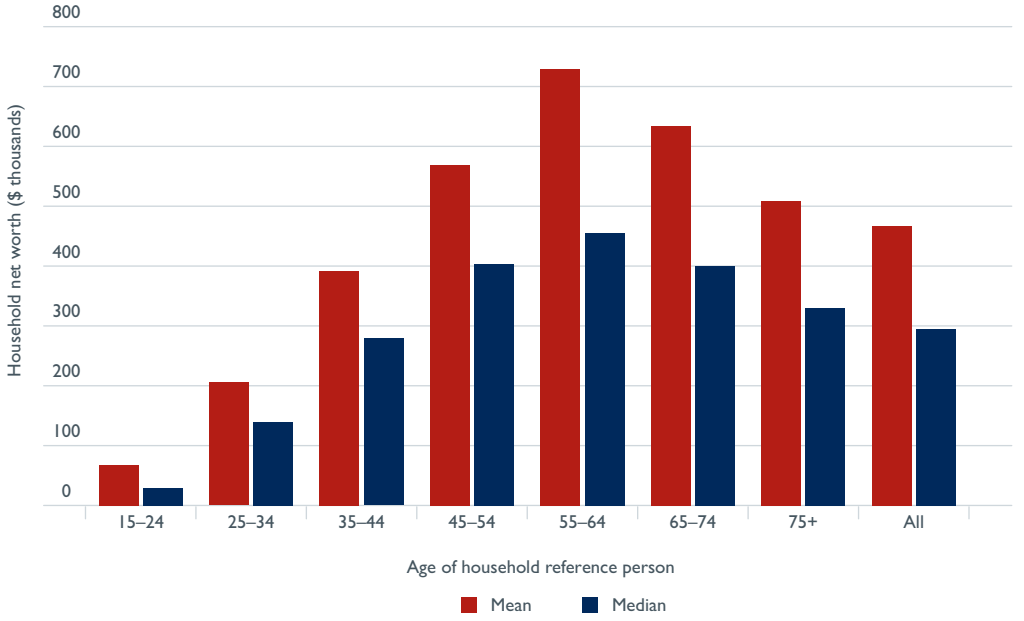
Age and lifecycle

The amount of wealth accumulated by an individual is closely related to that person's age. Figure 4.2 illustrates the link between household wealth and the age of the household reference person. Average and median wealth are both at their lowest for households headed by 15 to 24 year olds. Both average and median wealth rise with age, before peaking in the 55 to 64 age group. Wealth then declines as households begin to draw on their assets in their retirement. However the difference between the average and the median value of net worth shows that there are significant differences within these age groups.

Figure 4.3 reveals that while both wealth and income are highly dependent on age, the relationships differ. Household income peaks at a younger age (45–54) than household wealth. Household income is relatively high for households headed by persons aged between 25 and 34, but these households have yet to accumulate much wealth. Incomes are lowest for households headed by those aged over 65, but these older households still have substantial wealth holdings.

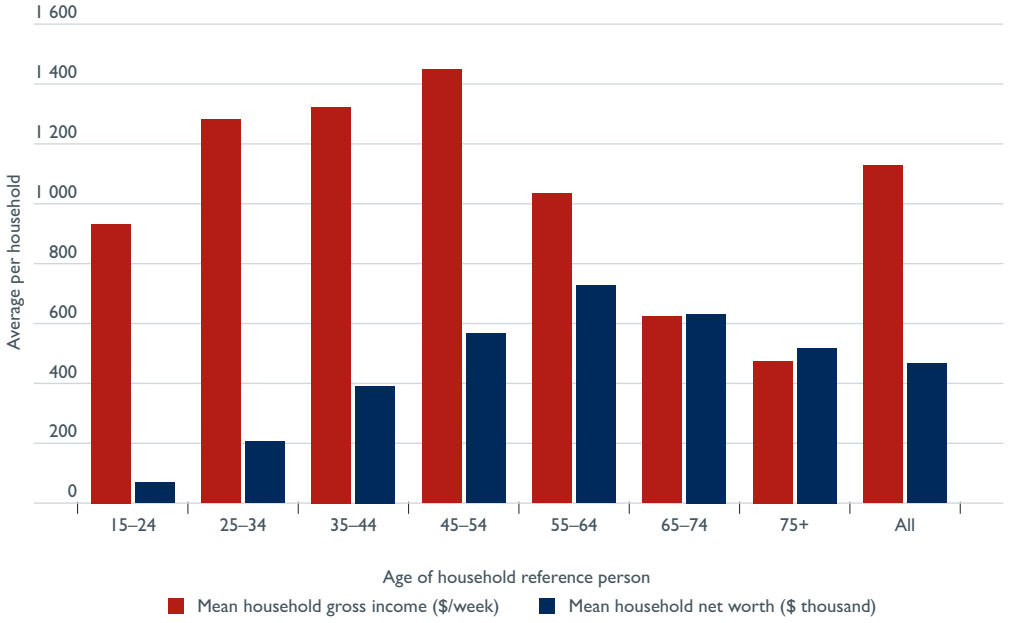
There are also differences in the composition of the wealth portfolio between different age groups. Table 4.6 shows selected indicators of the wealth portfolio by age. The most striking pattern is the decline in the debt-to-asset ratio as households age. A young person has an average ratio of 37 per cent, while a person aged over 65 has an average ratio of 1 per cent.

Figure 4.2 Mean and median household net worth by age of household reference person, Australia, 2003–04



Source: BITRE analysis of ABS SIH 2003−04 data.

Figure 4.3 Mean household net worth and income by age of household reference person, Australia, 2003–04



Source: ABS Cat. 6554.0.

Table 4.6 Selected measures of wealth by age of household reference person, Australia, 2003–04

Measure	*15–24*	*25–34*	*35–44*	*45–54*	*55–64*	*65+*	*Total*
Net worth ($ thousands)	68.3	205.4	391.2	568.1	729.8	577.3	467.5
Assets ($ thousands)	109.1	304.9	495.0	656.9	775.3	585.7	537.1
Debts ($ thousands)	40.8	99.5	103.8	88.8	45.4	8.4	69.5
Debt-to-asset ratio (per cent)	37.4	32.6	21.0	13.5	5.9	1.4	12.9
Value of home ($ thousands)	47.2	153.9	247.8	290.3	319.3	285.4	249.0
Home ownership rate (per cent)	20.4	50.0	67.8	78.8	82.5	83.1	70.0
Home assets as proportion of assets (per cent)	43.2	50.5	50.1	44.2	41.2	48.7	46.4
Liquid assets ($ thousands)	5.4	11.5	21.9	35.2	64.0	81.7	40.2
Liquid assets (per cent)	5.0	3.8	4.4	5.4	8.3	14.0	7.5
Proportion greater than $1 million (per cent)	0.2	1.5	5.8	13.5	18.7	13.2	9.8
Proportion less than $50 000 (per cent)	65.5	27.6	16.1	11.2	9.1	11.9	17.5

Source: BITRE analysis of ABS SIH 2003–04 data.

Table 4.7 compares the wealth of households in different lifecycle stages. Household wealth is highest for couple only households with a reference person aged 55–64, followed by couples with non-dependent children only, and couple only households with a reference person aged 65 and over. Household wealth is lowest for lone persons aged under 35 and for sole parent households. Couple households with a reference person aged under 35 have slightly more than twice the average wealth of similarly aged lone person households.

Table 4.7 Selected measures of wealth by lifecycle stage, Australia, 2003–04

Lifecycle stage	*Mean household net worth ($ thousands)*	*Debt-to-asset ratio (per cent)*	*Proportion owning home with or without mortgage (per cent)*	*Home assets as proportion of assets (per cent)*	*Proportion greater than $1 million (per cent)*	*Proportion less than $50 000 (per cent)*
Couple under 35	225.8	38.1	57.2	50.2	1.7	21.6
Couple with children under 5	368.9	27.2	71.8	50.8	3.8	13.2
Couple with children 5–14	470.0	21.3	75.7	49.6	8.0	8.4
Couple with children 15–24	689.0	14.2	87.0	47.2	15.9	5.0
Couple with dependents and non-dependents	590.8	14.6	83.2	47.6	15.3	6.4
Couple with non-dependent children	724.4	10.5	91.3	47.7	18.0	3.5
Couple only aged 55–64	895.1	4.1	90.2	37.6	24.2	2.6
Couple only aged 65+	712.1	1.1	89.3	44.2	17.5	5.8
Single person under 35	94.3	32.5	28.4	47.0	0.2	50.0
Single parent	157.6	19.1	39.4	52.5	1.1	45.0
Single person over 65	431.3	1.5	76.4	54.3	8.0	18.4

Source: BITRE analysis of ABS SIH 2003–04 data.

Half of all single people under 35 have a low level of wealth (i.e. less than $50 000). This compares with 22 per cent of couples under 35. In contrast, nearly one-quarter of all couples without children aged 55 to 64 have high levels of wealth (greater than $1 million). Twice as many couples under 35 own their home compared with single persons under 35.

The debt-to-asset ratio falls across the lifecycle stages, with young couples having a ratio of 38 per cent while couple households aged over 65 have a ratio of only 1 per cent. The debt-to-asset ratio of young couples is higher than the ratio for single persons of the same age group, even though the couples have a much higher net worth. This reflects the higher levels of home ownership of the couples.

Education

There is an established link between education and net worth (e.g. Kelly 2001, Headey, Marks and Wooden 2004), though the direction of causality is not always clear. The SIH reflects this relationship. Table 4.8 shows selected measures of wealth by levels of post-school education.

Table 4.8 Selected measures of wealth by post-school education level, Australia, 2003–04

Measure	*None*	*Certificate*	*Diploma*	*Degree*
Net worth ($ thousands)	398.6	430.5	491.4	665.6
Assets ($ thousands)	444.8	499.2	575.5	783.6
Debts ($ thousands)	46.2	68.7	84.1	118.0
Debt-to-asset ratio (per cent)	10.4	13.8	14.6	15.1
Value of home ($ thousands)	211.6	245.0	258.9	336.3
Home ownership rate (per cent)	67.2	73.4	70.7	71.7
Liquid assets ($ thousands)	33.8	30.4	40.9	68.0
Proportion greater than $1 million (per cent)	7.3	7.7	11.4	17.4
Proportion less than $50 000 (per cent)	21.9	14.7	13.8	12.3

Source: BITRE analysis of ABS SIH 2003–04 data.

The average amount of net worth increases across the education levels, from $399 000 for those with no post school education to $666 000 for those who hold a bachelor degree or higher qualification. The value of owner-occupied housing also increases, but the levels of home ownership do not vary much across the education levels. This seems to indicate that the actual value of the home increases with increasing education, a trend not readily apparent with other characteristics such as age. The amount of liquid assets increases with education, but the proportion does not vary much from the national average of 7 per cent.

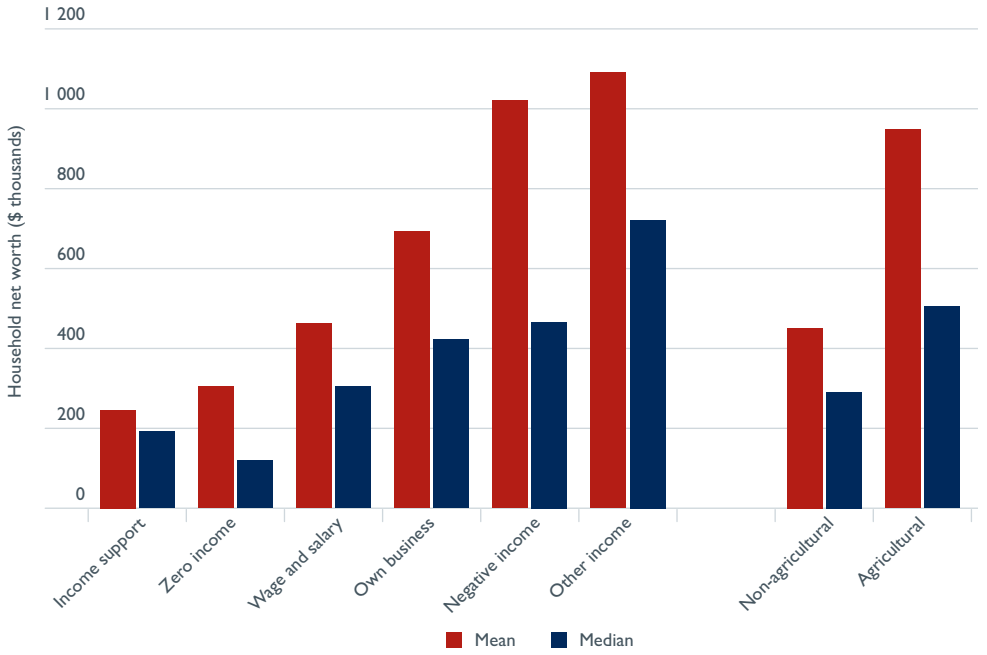
The debt-to-asset ratio increases over the education levels. Those with higher levels of education tend to have higher levels of debts. The reasons for this are not clear from the data, but may show an increased willingness to take on debt or be a consequence of the generally higher incomes of those with higher educational attainment.

Participation

Employment conditions can have an impact on net worth. There is an obvious link between income levels and net worth, which is explored in some depth in Chapter 10, but occupation and the source of income can also have an influence on household wealth.

Figure 4.4 shows the relationship between the source of a household's income and their net worth. Those on income support have the lowest levels of net worth with an average of $246 000. At the opposite extreme, households that derive their income from other sources (e.g. investments) and those who reported a negative income last financial year have an average net worth of more than $1 million. Both groups have very high levels of shares and other property assets, but the negative income group are distinguished from the other income sources group by very high levels of business assets (net unincorporated business assets of $261 000 compared to $7000 for wage earners and $12 000 for other income sources). Households with negative income constitute less than 0.5 per cent of all Australian households.

Figure 4.4 Mean and median net worth of households by income source, Australia, 2003–04



Source: BITRE analysis of ABS SIH 2003–04 data.

Another group that shows marked differences in net worth are farmers, who have an average net worth more than twice that of non-farmers ($948 000 compared to $451 000). Most of this difference is driven by business assets.

Table 4.9 shows selected measures of wealth by income source. The debt-to-asset ratio is highest for salary earners, possibly reflecting the security a reliable income gives. These measures show the differences between those with negative incomes and those with zero incomes. Negative income households have higher levels of home ownership, home values and liquid assets. Negative income households are also more likely to have high net worth than zero income households. Forty per cent of zero income households have net worth less than $50 000, compared to just 14 per cent of negative income households.

Table 4.9 Selected measures of wealth by income source, Australia, 2003–04

Measure	*Salary*	*Own business*	*Income support*	*Other source*	*Negative income*	*Zero income*	*Non-farm*	*Farm*
Net worth ($ thousands)	462.1	692.6	246.2	1 090.9	1 020.8	304.3	451.2	947.8
Assets ($ thousands)	561.3	788.5	253.9	1 121.2	1 111.9	335.9	521.3	999.3
Debts ($ thousands)	99.2	95.9	7.7	30.3	91.1	31.6	70.1	51.6
Debt-to-asset ratio (per cent)	17.7	12.2	3.0	2.7	8.2	9.4	13.5	5.2
Value of home ($ thousands)	262.5	301.9	166.8	393.1	299.7	150.5	250.3	213.0
Home ownership rate (per cent)	71.0	79.6	61.1	87.6	67.1	49.6	69.9	75.0
Home assets as proportion of assets (per cent)	46.8	38.3	65.7	35.1	27.0	44.8	48.0	21.3
Liquid assets ($ thousands)	29.9	51.5	18.9	189.2	70.8	16.7	39.6	59.7
Liquid assets (per cent)	5.3	6.5	7.4	16.9	6.4	5.0	7.6	6.0
Proportion greater than $1 million (per cent)	9.2	17.4	1.8	34.8	27.1	8.3	9.1	29.6
Proportion less than $50 000 (per cent)	13.0	8.3	32.4	6.4	13.6	39.1	17.7	9.6

Note: Business debt is not captured in the level of debt, as business assets are recorded as net of debts.
Source: BITRE analysis of ABS SIH 2003–04 data.

Explaining variation in household wealth

Multivariate regression analysis is a useful tool for distinguishing the relative importance of different social, economic and demographic characteristics in terms of their influence on wealth. For this project, ordinary least squares regression was used to evaluate a selection of socio-demographic characteristics. Variables were selected on the basis of previous studies and through correlation analysis. The results measure the predicted change in net worth if the household exhibits a particular characteristic. Variable details are provided in the notes of Table 4.10.

The regression analysis was conducted in two main stages. Model one investigates the demographic variables, such as age, education, employment and country of birth. Model two includes the variables that are believed to directly contribute to net worth—housing and income. Location variables were introduced to the model at each stage.

Some of the demographic characteristics, such as age and education, relate to individuals, rather than households. It was necessary to convert these variables to a household basis. Two methods were tested to determine the most effective way of selecting attributes.

The first was to construct variables that were true when anyone in the household exhibited that characteristic. For example, if anyone in the household held a bachelor degree or higher qualification, the degree variable was set to true. Under this method, sets of variables may sum to more than 100 per cent.

The second method was to identify a 'breadwinner' from within the household, and apply their characteristics. This was done by identifying the person within the household with the highest income. The breadwinner concept presumes that the primary earner is also the person with the most influence in relation to the management of household funds and assets.

Both sets of variables were tested for suitability through correlation and regression analysis. The variables based on the entire household were found to better explain variation in net worth, though the difference was small. It was decided to conduct the full analysis on variables constructed from the entire household.

Some attempts were made to simplify the models and reduce any interaction between variables. Some variables, such as the number of unemployed persons, were found to not be significant and were subsequently eliminated. With the exception of age and age squared,[24] no pair of explanatory variables has a correlation greater than 60 per cent. The remaining variables that are correlated at greater than 50 per cent were evaluated, and retained if it was considered they were measuring clearly different things. An example is age and home ownership (0.58).

Table 4.10 Testing the relationship between demographic characteristics and net worth, Australia, 2003–04

Explanatory variable	*Model 1*	*Model 1 and location*	*Model 2*	*Model 2 and location*
General sociodemographic variables				
Number of people 15+[a.]	41.3	37.5	*	*
Holds a bachelor degree or higher[b.]	135.0	123.9	*	*
Has completed year 12[b.]	70.1	69.1	*	*
Born in a Non–English speaking country[b.]	*	*	*	*
Born in Australia[b.]	146.7	159.1	99.4	109.4
Age of the oldest person[a.]	24.0	23.8	9.8	9.5
Age squared[a.]	–0.08	–0.08	*	*
Household hours worked[a.]	*	*	–2.2	–2.3
Industry:[b.]				
Agriculture, forestry and fishing	273.6	292.1	242.9	247.6
Mining	*	*	–146.3	*
Manufacturing	*	*	–87.4	–81.4
Electricity, gas and water supply	*	*	*	*
Construction	*	*	*	*
Wholesale trade	*	*	*	*
Retail trade	*	*	*	*
Accommodation, cafes and restaurants	*	*	*	*
Transport and storage	*	*	*	*
Communication services	*	*	–140.5	–150.3
Finance and insurance	*	*	*	–74.1
Property and business services	94.2	91.4	*	*
Government administration and defence	–79.7	–68.5	–114.8	–103.9
Education	–100.5	–87.7	–101.0	–91.7
Health and community services	–73.2	–65.3	–99.6	–92.8
Cultural and recreation services	*	*	*	*
Personal and other services	*	*	*	*
Occupation:[b.]				
Managers and administrators	331.3	316.1	170.1	160.1
Professionals	73.9	64.4	*	*
Associate professionals	95.6	93.5	*	*
Tradespersons and related	*	*	–58.7	–59.8
Advanced clerical and service	208.4	203.5	141.8	137.4
Intermediate clerical and service	*	*	*	*
Intermediate production and transport	–129.4	–122.1	–114.4	–109.8

(continued)

24. These two variables are obviously very highly correlated, as the latter is calculated from the former. However it is important to include both, as requiring age and net worth to have a linear relationship is contrary to previous studies and to the pattern presented in Figure 4.2.

Table 4.10 Testing the relationship between demographic characteristics and net worth, Australia, 2003–04 (continued)

Explanatory variable	*Model 1*	*Model 1 and location*	*Model 2*	*Model 2 and location*
Elementary clerical, sales and service	*	*	*	*
Labourers and related	–142.7	–134.4	–98.0	–92.6
Lifecycle group:[b.]				
Couple only, reference aged under 35	*	*	*	*
Couple only with dependent children	140.4	140.2	69.6	68.8
One parent with dependent children	*	*	*	*
Couple with dependent/non–dependent children	80.4	80.0	*	*
Couple only, reference aged 55 and over	425.8	439.4	270.1	281.4
Lone person aged 65 and over	*	*	*	*
Housing:[b.]				
Owns their home outright			330.9	329.5
Rents their home privately			–168.4	–175.1
Rents their home from a public authority			–143.6	–147.6
Other housing arrangement			*	*
Income:				
Previous financial year income ($ thousands)[a.]			5.6	5.5
Income source:[b.]				
Had no income last financial year			323.3	327.5
Other source of income			694.7	684.7
Income sourced from business			112.7	115.0
Receiving income support			–71.5	*
Had a negative income last financial year			922.0	896.4
Geography:[b.]				
Area: Balance of state		–84.1		–60.0
Remoteness:				
Inner regional		*		*
Outer regional, remote and very remote		*		*
Section of state:				
Other urban		*		*
Other		111.6		*
State or territory:				
VIC		–85.2		–84.1
QLD		–123.7		–80.3
SA		–165.7		–141.7
WA		–114.8		–84.8
TAS		–165.8		–142.7
NT		*		*
ACT		*		*
Constant	–872.4	–737.6	–276.8	*
Adjusted R–squared (per cent)	21.4	22.4	37.4	37.9

Notes: The dependent variable is household net worth, measured in thousands of dollars.

* The coefficient was not statistically significant at the 5 per cent level.

a. These variables are not binary and cannot be directly compared to other variables.

b. Reference groups: Education = not completed year 12; Country of birth = born in an English-speaking country; Housing = owns home with mortgage; Industry = no industry; Occupation = no occupation; Lifecycle = Lone person under 35; Income source = wage; Area = Capital city; Remoteness = major city; Section of state = major urban; State = NSW.

Source: BITRE analysis of ABS SIH 2003–04 data.

Interpreting the results

Table 4.10 shows the results of the regression analysis. Only the coefficients that are significant at the 5 per cent level are reproduced in the table. As nearly all the variables are binary, the coefficients can generally be interpreted as the contribution to net worth, expressed in thousands of dollars. The variables that can not be interpreted this way are:

- number of people aged 15+ in household
- age of the oldest person and age squared
- household hours worked
- previous financial year income.

These variables should be interpreted carefully when comparing their effect on net worth in relation to the other variables.

The binary variables are interpreted in reference to the default household. Full details of the default household are specified in the notes to Table 4.10. In the case of lifecycle groups, where the default is a lone person household aged under 35, in model one a couple with dependent children will have a net worth $140 000 higher than a single person under 35. The non-binary variables, such as the number of people over 15, have a multiplying effect. So for every person over 15 in a household, net worth is increased by $41 000. A household with three people over 15 would have a net worth $82 000 higher than a household with one person over 15.

In the first model, the binary variables that had the most explanatory power were: indicators of households with at least one person working in agriculture; managers and administrators; advanced clerical and service workers; and couple only households aged over 55. These variables all made a contribution to net worth of more than $200 000. Age also had a substantial influence, with a household with an oldest person aged 25 being predicted to have $500 000 less net worth than a household with an oldest person aged 55, holding other factors equal.

In the second model, the housing and income variables dominate, though farming households and couples aged over 55 still have a high explanatory power. The source of income has significant explanatory power for net worth. Those on a negative income have $922 000 higher net worth than wage earners. Home ownership is also significant with households that own their home outright having a net worth $330 000 higher and renters having a net worth $168 000 lower than those with a mortgage. Age is again important, although not quite to the same extent—a household with an oldest person aged 25 is predicted to have $230 000 less net worth than an otherwise similar household with an oldest person aged 55.

The role of location

Location variables were added to each model in the regression analysis. As detailed spatial identifiers are not available from the SIH unit record file, the location variables relate to state, territory and region type. The results are outlined in Table 4.10.

The addition of the location variables had very little impact in comparison to the other variables, with only a small increase in the R-squared for each model. This may seem to imply that there is little variation in net worth across these aggregate regions. In fact, Chapter 5 shows there is considerable variation in wealth across aggregate regions. However, the variation within regions is much greater. Some of the variation in wealth within regions is attributable to differences in the social and demographic make-up of local populations. This means that an understanding of the relationships between sociodemographic characteristics and wealth should help in understanding the spatial distribution of household wealth.

The remoteness and section of state variables were not individually significant. However each set of location variables was also tested for its joint significance in the regression models. Table 4.11 shows the results of the significance tests. Any F-statistic above the critical value is significant at the 5 per cent level.

The location variables as a whole are statistically significant in both models. The remoteness classes are the only variable set that is not significant. The section of state variables have the highest F-statistic. The distinction between capital cities and state balances would appear to be the most useful as the variables are significant both individually and as a set. States also make a contribution, but the ACT and NT are not significantly different from NSW.

It is clear that location type does make a small but significant contribution to explaining variation in net worth. Location at a small area scale could potentially explain a great deal more of the variation in net worth across households. The role of place is explored further in the following two chapters.

Table 4.11 Testing the contribution of location to the regression analysis, Australia, 2003–04

Variables tested	*Model 1 F-statistic*	*Model 2 F-statistic*	*Critical value*
All location variables	9.57	6.96	1.83
Capital city and state balance	8.80	5.60	3.84
Remoteness	1.43	1.42	3.00
Section of state	10.65	10.52	3.00
State or territory	7.27	5.92	2.01

Source: BITRE analysis of ABS SIH 2003–04 data.

Summary

This chapter has used the ABS' SIH for 2003–04 to summarise the composition and distribution of household wealth at the national scale. It has also explored the relative importance of a variety of sociodemographic characteristics as predictors of household wealth.

This national overview of the nature of the wealth portfolio of Australian households provides background and context for the following chapters which discuss the spatial distribution of wealth at both a broad area (Chapter 5) and a small area scale (Chapters 6 and 7).

Key messages

In 2003–04, average household wealth was $467 600, consisting of $537 100 of assets and $69 400 in liabilities.

For most Australian households, the dwelling in which they live is their main asset. Net property assets average $260 000 per household and contribute 56 per cent of net worth. About 80 per cent of net property assets are attributable to the owner-occupied dwelling.

Only 7 per cent of household assets are held in a liquid form which can readily be turned into cash in a crisis.

The debt-to-asset ratio averages 13 per cent across Australian households.

The wealthiest 20 per cent of households own 59 per cent of total household wealth, while the least wealthy 20 per cent own just 1 per cent.

Nearly 10 per cent of households have net worth exceeding $1 million.

The least wealthy 10 per cent of households have a debt-to-asset ratio of 50 per cent, while for the wealthiest 10 per cent of households, debts represent just 6 per cent of assets.

Business assets and shares are distributed very unequally across Australian households, while dwelling contents are quite evenly distributed.

Wealth is lowest for households headed by 15 to 24 year olds and increases with age, peaking for the 55 to 64 age group, before declining as households draw on their assets in retirement.

The debt-to-asset ratio is highest for households headed by 15 to 24 year olds (37 per cent) and declines with age to reach just 1 per cent for the 65 plus age group.

Farmers have an average net worth more than twice that of non-farmers ($948 000 compared to $451 000).

Controlling for the influence of sociodemographic factors, place has a small but statistically significant impact on household wealth.

Chapter 5 Household wealth by aggregate regions, 2003–04

Introduction

The previous chapter found that place has a significant influence on the wealth of Australian households. This chapter presents an overview of spatial variation in household wealth, based on data from the ABS' SIH for 2003–04.[25, 26] The analysis uses several regional summary classifications, namely:

- states and territories
- capital cities and the rest of Australia
- remoteness classes
- urban centre size (major urban, other urban, rural)
- individual capital cities and state balances.

BITRE's *Household Wealth Database* details the household wealth estimates for each of these regional summary classifications. The analysis in this chapter highlights spatial differences in average household wealth as well as differences in the composition of the wealth portfolio. The discussion focuses on those results which are significantly different from the Australian average at the five per cent significance level.

A high level of average wealth in a region can mask considerable variation, as it is not unusual for wealth to be concentrated within a relatively small number of households. This chapter also presents information on the distribution of household wealth within these aggregate regions.

Chapters 6 and 7 present more detailed regional estimates of household wealth, derived by BITRE using small area estimation techniques.

25. Estimates for the states and territories and capital cities and state balances were obtained from ABS Cat. 6554.0. Estimates for remoteness classes and urban centre size categories were obtained from ABS as a special data request.
26. BITRE has also analysed HILDA 2002 estimates of household wealth for states and territories, capital cities and state balances, and remoteness classes. This analysis generally supports the findings from the ABS SIH reported in this chapter. However, there are differences, particularly for less populated regions, such as ACT, NT and the state balances, where the HILDA data is generally less reliable than the SIH data.

States and territories

Average household wealth significantly exceeds the national average of $467 600 in NSW, but is not significantly different from the national average for either Victoria or the ACT. All other states and the NT have average household wealth which is significantly below the national average. Details are provided in Table 5.1.

ABS (2002) produced estimates of average household net worth for Australia's states and territories for 1994 to 2000. For the year 2000, the study also found that average net worth was highest for NSW, followed by ACT and then Victoria, while average net worth was lowest for Tasmania. However, there were some minor differences in the rank order of the states and territories between ABS (2002) and the 2003–04 SIH, with the 2003–04 rankings of Queensland and NT being lower than their 2000 rankings.

Table 5.1 Selected indicators of household wealth, states and territories, 2003–04

	NSW	*VIC*	*QLD*	*SA*	*WA*	*TAS*	*NT*	*ACT*	*AUSTRALIA*
Net worth per household ($ thousands)	563	478	386	370	410	325	344	505	468
Net property assets per household ($ thousands)	343	258	202	179	204	155	149	283	260
Assets per household ($ thousands)	643	547	449	424	479	360	435	581	537
Liabilities per household ($ thousands)	80	68	64	53	69	35	91	76	69
Debt-to-asset ratio (per cent)	12	13	14	13	14	10	21	13	13
Liquid assets per household ($ thousands)	45	42	37	32	42	23	18	39	40
Owner-occupied property assets as a share of assets (per cent)	51	45	43	42	41	41	36	47	46
Median net worth ($ thousands)	359	313	242	244	252	221	191	401	294
Proportion with net worth of more than $1 million (per cent)	14	9	7	6	8	5	5	11	10
Proportion with net worth of less than $50 000 (per cent)	18	15	21	17	17	17	22	18	17
Gini coefficient	0.58	0.56	0.57	0.54	0.58	0.53	0.63	0.52	0.62

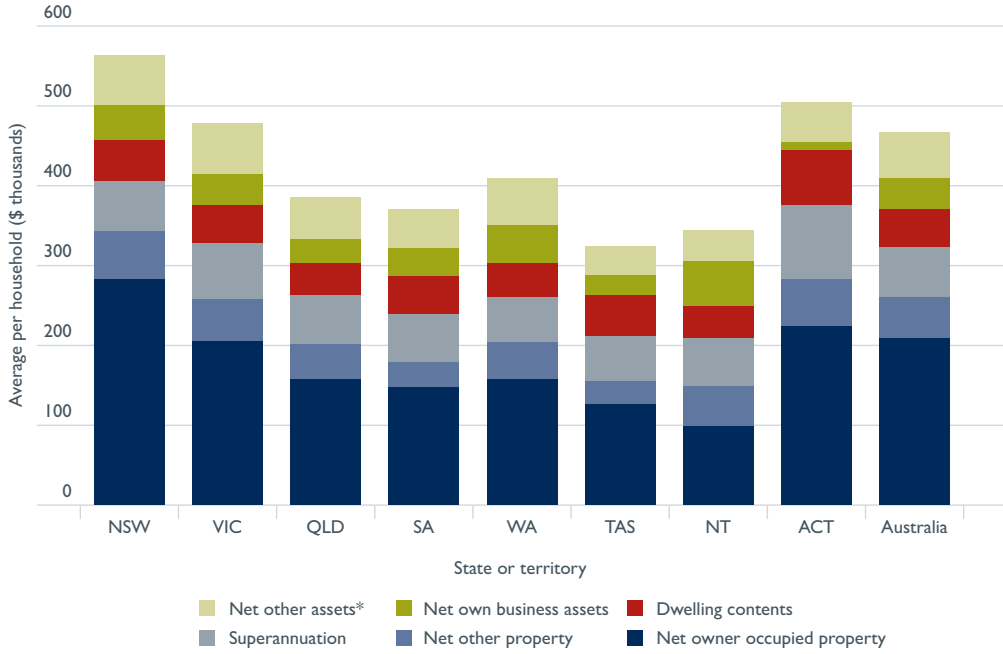
Note: Bank accounts, debentures and bonds and shares are defined as liquid assets.
Source: BITRE analysis of ABS Cat. 6554.0 and ABS SIH 2003–04 CURF.

Figure 5.1 illustrates differences in average household wealth across the states and territories, and also highlights differences in the composition of wealth. It shows that state and territory differences in the average net value of owner-occupied property assets are the main driver of state and territory differences in average net worth.

The average net value of property assets is significantly higher than the national average in NSW and significantly lower than the national average in WA, Queensland,

SA, Tasmania and the NT. This pattern is largely attributable to owner-occupied housing, but the average net value of other property in NSW also significantly exceeds the national average, while SA and Tasmanian households own relatively little other property.

Figure 5.1 Average household wealth, states and territories, 2003–04



Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.

Source: BITRE analysis of ABS Cat. 6554.0.

There are a number of other notable differences in the composition of wealth across states and territories:

- The total financial assets[27] of Tasmanian households ($94 500) are much lower than for Australian households ($136 500), and this reflects lower holdings of most types of financial assets.
- ACT households have much higher average superannuation assets ($91 500) than Australian households ($63 500). However, the average value of trusts, incorporated and unincorporated businesses are all significantly lower than the Australian average.
- NT and NSW households have high debts per household, while Tasmanian and SA households have a relatively low level of debt, on average. These results are largely attributable to the average value of principal outstanding on owner-occupied property loans being particularly high in the NT and NSW, and particularly low in SA and Tasmania.

Nationally, the debt-to-asset ratio is 13 per cent. The debt-to-asset ratio is significantly below the national average for Tasmania, and is particularly high for the NT at

27. Financial assets include superannuation, accounts held with financial institutions, shares, trusts, own incorporated businesses, and debentures and bonds.

21 per cent. This is partly attributable to the NT's relatively youthful age structure and to the high proportion of households with mortgages. The average value of principal outstanding accounts for a high share of the value of owner-occupied properties in the NT (36 per cent versus 16 per cent nationally).

The wealth portfolio of Australian households tends to lack diversity, with the owner-occupied dwelling accounting for 46 per cent of assets, while property accounts for 60 per cent of all assets.[28] This lack of diversity is most apparent in NSW, where the owner-occupied dwelling accounts for 51 per cent of assets and property accounts for 64 per cent of assets.

One avenue through which wealth can contribute to economic wellbeing is by providing liquidity. Property assets and superannuation assets are the major components of wealth, but cannot be easily liquidated. The most liquid asset categories are accounts held with financial institutions, shares and debentures and bonds.[29] On average, Australian households hold $40 200 (8.6 per cent) of wealth in these easily liquidated assets. However, average holdings of liquid assets are much lower than this for NT, SA and Tasmania.

Measures of average wealth can provide a somewhat misleading picture of the wealth holdings of a typical household, as averages can be heavily influenced by a small number of extremely wealthy households. Estimates of median wealth provide a somewhat different picture than average wealth measures. Nationally, median household wealth is $294 700, which is 63 per cent of average household wealth.

Median wealth is highest in the ACT, followed by NSW and Victoria. In contrast, NSW has a much higher average wealth estimate than the ACT, because the top 20 per cent of NSW households tend to have greater net worth than the top 20 per cent of ACT households. The NT has the lowest median wealth.[30] This contrasts with the average wealth estimates, which were much lower for Tasmania than for the NT. The key reason for this is that the top 5 per cent of NT households are estimated to have much higher wealth than the top 5 per cent of Tasmanian households.

Table 5.1 reveals that NSW has the highest proportion of households with net worth of over $1 million. In contrast, millionaire households are underrepresented in Tasmania and the NT. The proportion of low wealth households, with net worth of less than $50 000, is greatest for Queensland and the NT, while Victoria has relatively few such households.

Figure 5.2 uses box plots to summarise the distribution of wealth across households in each state and territory. Some interesting features include:

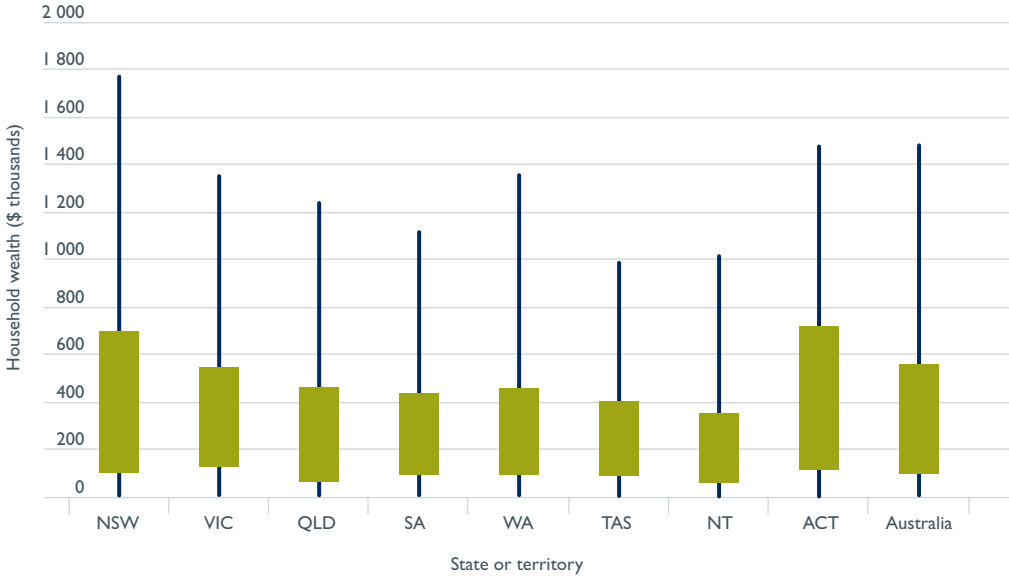
- Less than one-quarter of NSW, Victorian and ACT households have net worth below $100 000.
- NSW and the ACT are the only two states or territories in which more than one-quarter of households have net worth of over $600 000.

28. This is a conservative estimate as it excludes the value of property assets held indirectly (e.g. by trusts).
29. Some forms of trust (e.g. cash management trusts) are also highly liquid. However, other types (e.g. family trusts, primary production business trusts) may be much more difficult to liquidate. As the SIH does not distinguish between these different forms of trust, trusts have not been included in the measure of liquid assets.
30. ABS (2002) produced household wealth estimates for 1994 to 2000 and also found that the NT had the lowest median wealth of the states and territories in 2000, despite having only the third lowest average wealth per household.

- SA and WA have quite similar distributions of net worth, but the wealthiest WA households have considerably higher net worth than the wealthiest SA households.

The Gini coefficient was introduced in the previous chapter (see Box 4.1 on page 56) and provides a useful summary measure of inequality. At the state and territory scale, Table 5.1 shows that the NT has the most unequal wealth distribution, while wealth is more evenly distributed across households in the ACT, SA and Tasmania.

Figure 5.2 Overview of the distribution of household wealth, states and territories, 2003–04



Notes: The green box represents the inter-quartile range: the top of the green box represents the 75th percentile and the bottom represents the 25th percentile of the wealth distribution for households in the relevant state or territory. The top line ends at the 95th percentile, while the bottom line ends at the 5th percentile of the wealth distribution.

Source: BITRE analysis of ABS SIH 2003–04 CURF.

Capital cities and the rest of Australia

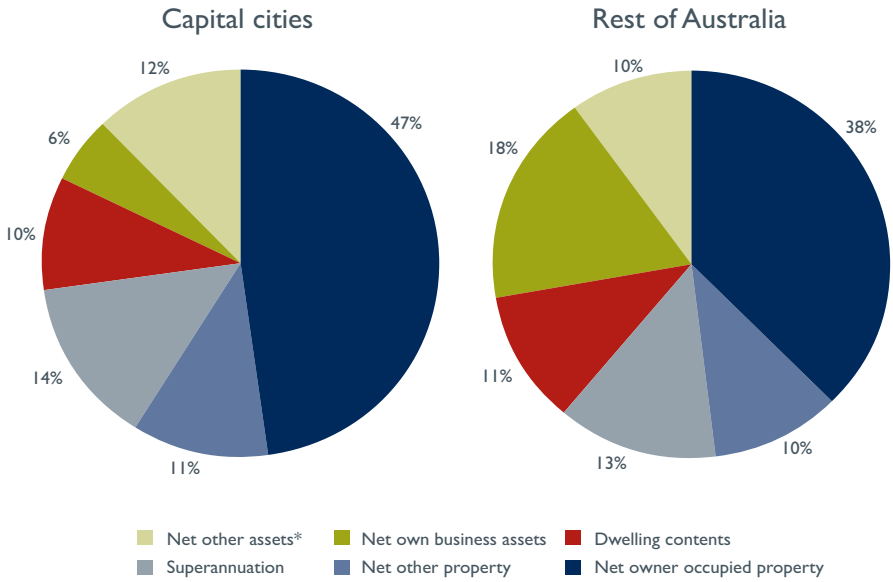
Average household wealth is much higher in the eight capital cities ($503 600) than in the rest of Australia ($405 100). This gap is largely attributable to differences in net owner-occupied property assets, which average $241 500 in the capital cities and $152 600 in the rest of Australia. The capital cities also have higher other property assets ($56 000 versus $42 200) and higher superannuation assets ($69 300 versus $53 400). In contrast, the net value of unincorporated businesses is considerably lower in the capital cities ($7 300) than in the rest of Australia ($30 000). Outside the capital cities, a large proportion of unincorporated businesses are farms.

Figure 5.3 shows how the composition of household wealth differs between the capital cities and the rest of Australia. The main differences are that net owner-

occupied property assets account for a much larger proportion of wealth in the capital cities, while net business assets account for a much smaller proportion of wealth in the capital cities than in the rest of Australia. Overall, regional Australia tends to have a more diversified asset portfolio than the capital cities. There is no significant difference in average holdings of liquid assets between the capital cities and the rest of Australia.

The debt-to-asset ratio is significantly higher for the capital cities (13.6 per cent) than for the rest of Australia (11.4 per cent). This is because average property loans are higher in the capital cities.

Figure 5.3 Composition of household wealth, capital cities and rest of Australia, 2003–04



Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.

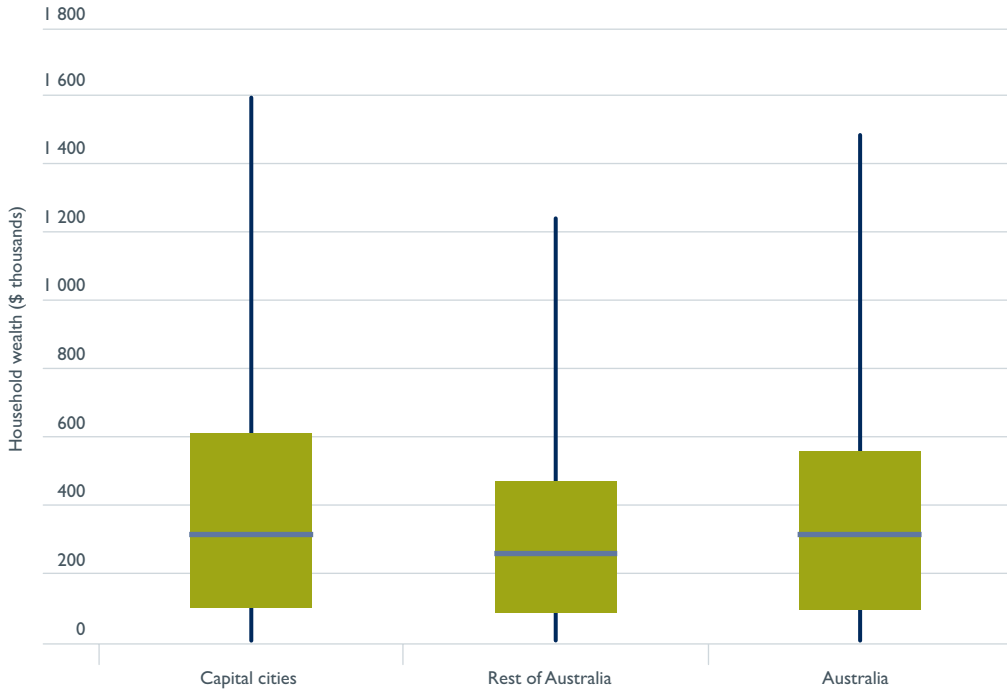
Source: BITRE analysis of ABS Cat. 6554.0.

Median household wealth is $323 700 in the capital cities and $254 000 in the rest of Australia. Figure 5.4 uses box plots to summarise the distribution of wealth within the capital cities and within the rest of the country. The bottom 5 per cent of capital city households have a net worth of $10 000 or less, as do the bottom 5 per cent of households in the rest of Australia. However, the top 5 per cent of capital city households have much higher net worth than the top 5 per cent of households in the rest of Australia. Although average and median net worth are considerably higher in the capital cities, the overall level of wealth inequality is only marginally higher for the capital cities (Gini coefficient = 0.61) than for the rest of Australia (0.60).

Remoteness classes

Clearly, there is considerable spatial variation in household wealth, both across states and territories and within states and territories. This section uses the ABS Remoteness Structure to separate the *major cities* from *inner regional, outer regional* and *remote* areas. This ABS Remoteness Structure groups census collection districts into five broad classes of remoteness, which share common characteristics in terms of physical distance from services and opportunities for social interaction.

Figure 5.4 Overview of the distribution of household wealth in capital cities and rest of Australia, 2003–04



Notes: The data for 'Rest of Australia' excludes the NT due to unavailability of data The horizontal blue line represents median net worth. The green box represents the inter-quartile range: the top of the green box represents the 75th percentile and the bottom represents the 25th percentile of the wealth distribution for households in the relevant region. The top line ends at the 95th percentile, while the bottom line ends at the 5th percentile of the wealth distribution.

Source: BITRE analysis of ABS SIH 2003–04 CURF.

The five remoteness classes are:

- *major cities of Australia*[31]
- *inner regional Australia*
- *outer regional Australia*
- *remote Australia*
- *very remote Australia.*

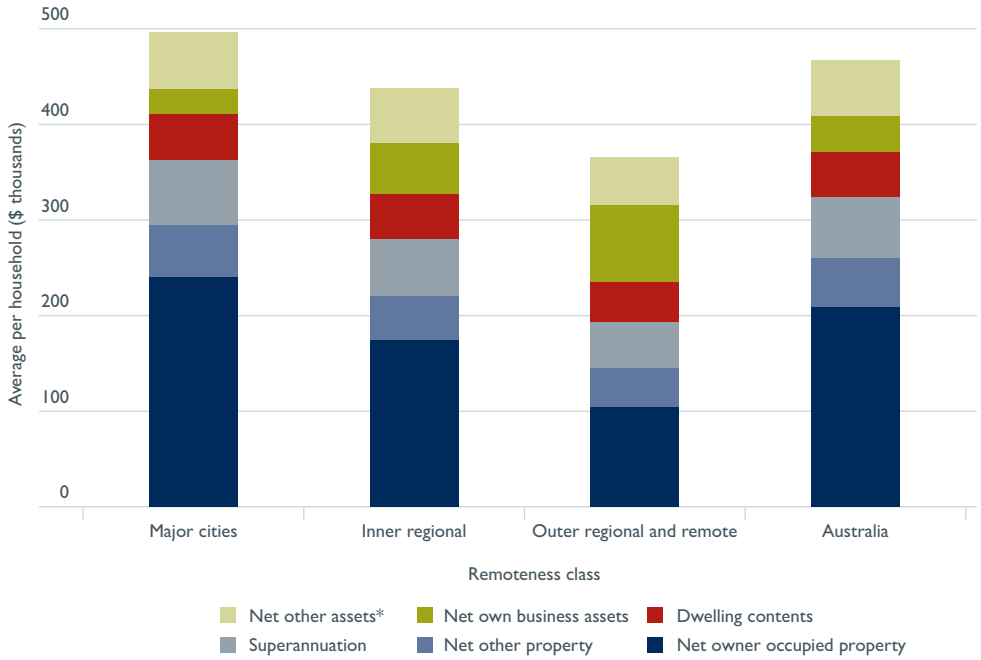
31. Any location within a short distance of an urban centre of more than 250 000 is included in this class. Therefore, Newcastle, Wollongong, Gold Coast and Geelong belong to the *major cities* class, but Darwin and Hobart do not.

The ABS SIH for 2003–04 excluded *very remote* areas from its scope. The following analysis is therefore based only on the first four of the aforementioned remoteness classes. Whenever disaggregated data is unavailable, the discussion groups *outer regional* and *remote Australia* into a single combined category.

In comparison to the national average of $467 600, average household net worth is significantly greater in the *major cities* ($496 500) and significantly lower in *outer regional Australia* ($363 900). For *inner regional Australia* ($438 200) and *remote Australia* ($379 300), average household net worth is somewhat below the national average, but the difference is not statistically significant.

Figure 5.5 illustrates differences in average household wealth across remoteness classes, and also highlights differences in the composition of wealth. It shows that differences in the average net value of owner-occupied property assets are the main driver of differences in average net worth across remoteness classes. The other key driver is business assets—the average value of business assets tends to rise with increasing remoteness.

Figure 5.5 Average household wealth by remoteness class, 2003–04



Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.

Source: BITRE analysis of ABS SIH special request table.

Net owner-occupied property assets are highest in the *major cities* ($240 300), followed by *inner regional Australia* ($174 100), *outer regional Australia* ($107 400) and *remote Australia* ($71 800). *Remote* residents tend to have a particularly high level of other property (e.g. investment properties), with net other property assets averaging $75 900 for *remote* households, compared to the national average of $50 900. *Outer*

regional residents have low net holdings of other property assets ($37 700), while the *major cities* and *inner regional Australia* do not differ significantly from the national average. On average, the net property assets of *major cities* residents are double those of *outer regional* and *remote* residents.

The net value of unincorporated and incorporated businesses is lowest in the *major cities* ($25 900) and highest in *outer regional* and *remote Australia* ($80 300).

Other notable differences in terms of remoteness include:

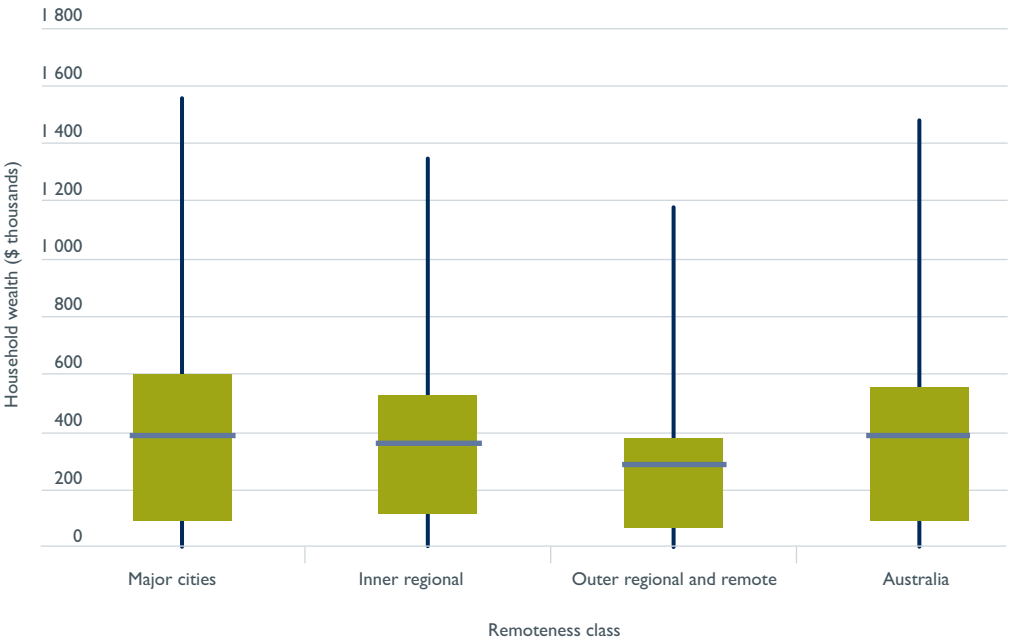
- HECS debt and credit card debt are significantly higher than the national average for the *major cities*, and significantly lower than the national average for the other remoteness classes.
- Average superannuation assets and average dwelling contents are both significantly lower than the national average for *outer regional Australia* and *remote Australia*.
- Average vehicle assets are significantly higher than the national average for *inner regional Australia* and *remote Australia*.
- *Outer regional* and *remote Australia* has relatively low average holdings of liquid assets ($32 200 per household).
- The debt-to-asset ratio is lowest in *inner regional Australia* (10.9 per cent) and highest in the *major cities* (13.7 per cent).

The major cities have an asset portfolio which tends to lack diversity, with the owner-occupied dwelling accounting for a considerably greater share of assets in the *major cities* (50 per cent), than in *inner regional* (42 per cent), *outer regional* (32 per cent) or *remote Australia* (22 per cent).

Figure 5.6 uses box plots to summarise the distribution of wealth across households within each of these remoteness classes. Interestingly, the bottom 25 per cent of *inner regional* households are wealthier than the bottom 25 per cent of households in the *major cities*. However, median wealth is highest in the *major cities* ($320 700), compared to $283 700 in *inner regional Australia* and $200 500 in *outer regional* and *remote Australia*. The top ranked households in the *major cities* have much higher net worth than the top ranked households in *inner regional Australia* or *outer regional* and *remote Australia*.

The overall level of wealth inequality is higher for *outer regional* and *remote Australia* (Gini coefficient = 0.66), than it is for the *major cities* (0.60) or *inner regional Australia* (0.60). Thus, *outer regional* and *remote* areas of Australia have low net worth *and* a relatively uneven distribution of net worth across households.

Figure 5.6 Overview of the distribution of household wealth, remoteness classes, 2003–04



Notes: The horizontal blue line represents median net worth. The green box represents the inter-quartile range: the top of the green box represents the 75th percentile and the bottom represents the 25th percentile of the wealth distribution for households in the relevant remoteness class. The top line ends at the 95th percentile, while the bottom line ends at the 5th percentile of the wealth distribution.

Source: BITRE analysis of ABS SIH 2003–04 CURF.

Urban centre size

The regression analysis undertaken in Chapter 4 found that urban centre size was a more important determinant of household wealth than was remoteness. This section uses the ABS' section of state classification to explore how household wealth depends on urban centre size. Three broad categories are considered:

- *major urban*: centres of more than 100 000 persons
- *other urban*: centres of between 1000 and 100 000 persons
- *rural Australia*: includes localities of less than 1000 persons as well as the rural balance.

Table 5.2 shows selected indicators of household wealth for these three categories. Average household net worth is highest in *rural Australia*, followed by *major urban* areas. *Other urban* areas have the lowest average wealth, because they have much lower property assets than the other two categories. While *major urban* areas have

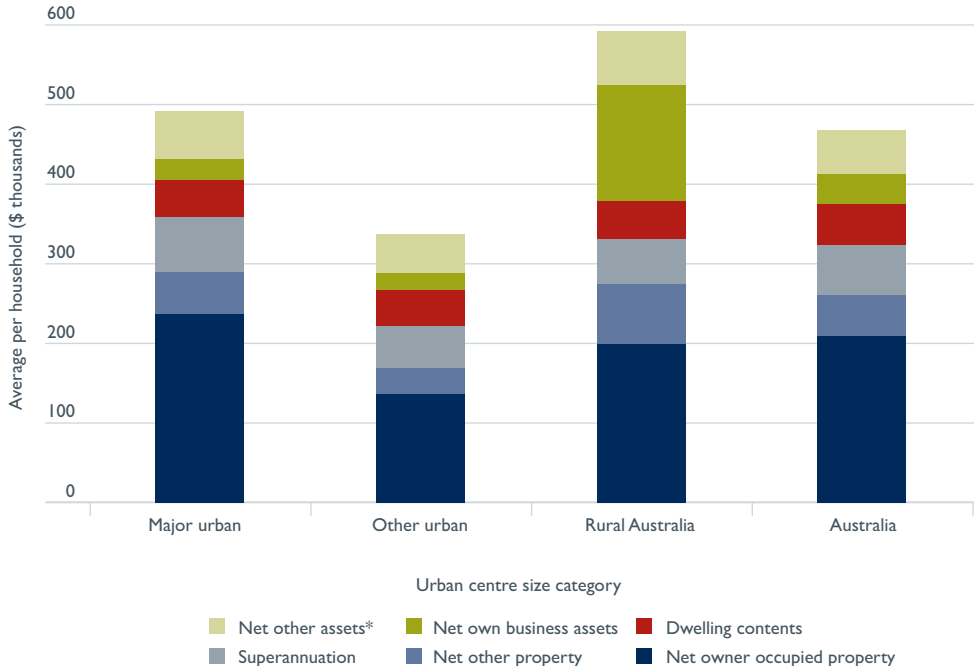
particularly high average holdings of owner-occupied property assets, *other urban* areas have low average holdings of both owner-occupied and other property assets (see Figure 5.7). Households in *other urban* areas are just as likely to own their own home as *major urban* households, but the average value of owner-occupied homes is much lower. This also holds true for other property assets.

Table 5.2 Selected indicators of household wealth by urban centre size, 2003–04

	Major urban	*Other urban*	*Rural*	*Australia*
Net worth per household ($ thousands)	492	338	592	468
Net property assets per household ($ thousands)	290	168	274	260
Assets per household ($ thousands)	570	389	646	537
Liabilities per household ($ thousands)	79	51	54	69
Debt-to-asset ratio* (per cent)	14	13	8	13
Liquid assets per household ($ thousands)	42	33	42	40
Owner-occupied property assets as a share of assets (per cent)	49	43	35	46
Median net worth ($ thousands)	319	224	325	294
Proportion with net worth of more than $1 million (per cent)	11	5	15	10
Proportion with net worth of less than $50 000 (per cent)	18	19	11	17
Gini coefficient	0.61	0.62	0.61	0.62

Notes: *Excludes business liabilities (e.g. farm debts), because the SIH does not collect separate information on business assets and business liabilities.
Bank accounts, debentures and bonds and shares are defined as liquid assets.
Source: BITRE analysis of ABS SIH 2003–04 CURF and ABS special data tabulation.

Figure 5.7 Average household wealth by urban centre size, 2003–04



Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.
Source: BITRE analysis of ABS SIH special request table.

Rural areas have relatively high other property assets,[32] as well as very high business assets from their farms. Net business assets (incorporated and unincorporated) average $145 600 in *rural Australia*, $25 500 in *major urban* areas and $21 000 in *other urban* areas.

Other notable differences in terms of urban centre size include:

- Average dwelling contents and superannuation assets are relatively low in *other urban* areas, as are average holdings of liquid assets.
- *Rural Australia* has particularly high average vehicle assets and loans.
- Credit card and HECS debt is highest in *major urban* areas.
- Liabilities, and mortgages in particular, are much higher in *major urban* areas than in *other urban* areas and *rural Australia*.
- The debt-to-asset ratio is lowest in *rural Australia* and highest in *major urban* areas.
- The *major urban* areas have an asset portfolio which lacks diversity, with the owner-occupied dwelling accounting for a considerably greater share of assets, than it does in *other urban* areas or *rural Australia*.

Figure 5.8 uses box plots to summarise the distribution of wealth across households within each of the urban centre size categories. It reveals that the least wealthy *rural* households have much higher wealth than the least wealthy households in urban areas. This is consistent with Table 5.2 which found that only 11 per cent of *rural* households had net worth of less than $50 000, compared to 18 per cent of *major urban* households and 19 per cent of *other urban* households.

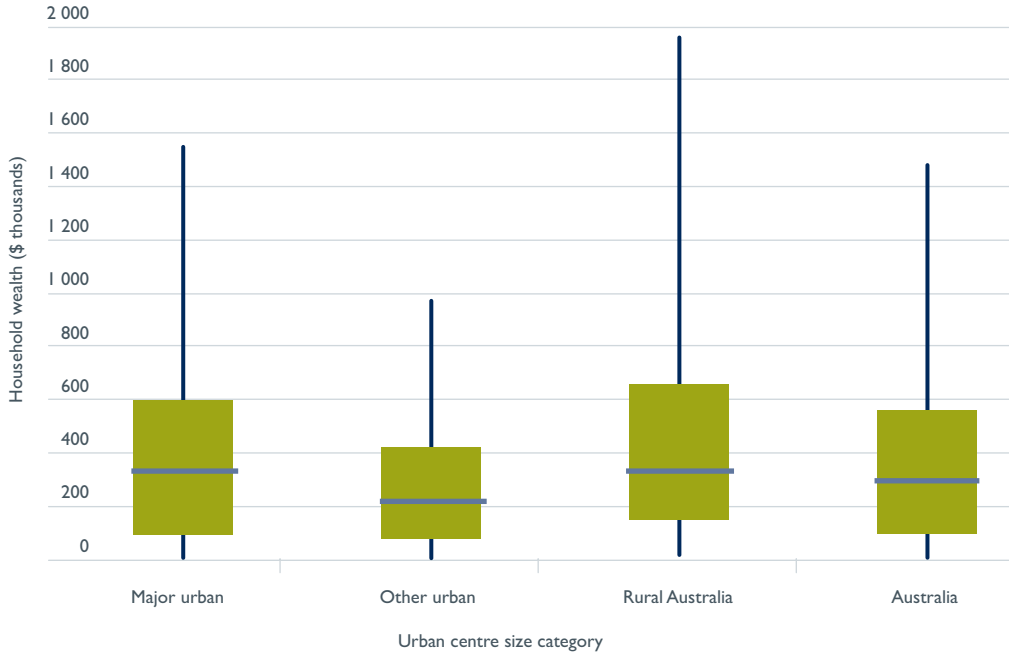
The distribution of net worth across households is much more condensed for *other urban* areas, than it is for *major urban* and *rural Australia*. In particular, the distribution of wealth within *rural Australia* has a very long tail. Fifteen per cent of *rural* households have net worth in excess of $1 million, compared to 11 per cent of *major urban* households and only 5 per cent of *other urban* households.

The large number of high net worth households in *rural Australia* is largely attributable to family owned farm businesses. The ABS' SIH for 2003–04 estimates that about 10 per cent of *rural* households owned an agricultural business, and on average, each agricultural business was worth $818 000. It is therefore not surprising that 15 per cent of *rural* households have net worth of more than $1 million.

Despite the considerable differences in the distribution of wealth that can be seen in Figure 5.8, there is no appreciable difference in the Gini coefficients across the three categories.

32. This includes rental properties, holiday homes, weekenders, second homes, time-share properties, dwellings under construction and non-residential property assets (e.g. offices, vacant land). It excludes property assets that form part of a farm or other business owned by the household.

Figure 5.8 Overview of the distribution of household wealth, urban centre size categories, 2003–04



Notes: The horizontal blue line represents median net worth. The green box represents the inter-quartile range: the top of the green box represents the 75th percentile and the bottom represents the 25th percentile of the wealth distribution for households in the relevant section of state category. The top line ends at the 95th percentile, while the bottom line ends at the 5th percentile of the wealth distribution.

Source: BITRE analysis of ABS SIH 2003–04 CURF.

The urban centre size classification is probably the most useful regional summary classification for understanding spatial variation in household wealth. It separates out *rural* households, who have a very distinctive wealth profile, characterised by high rates of farm business ownership. It also identifies the relatively low wealth holdings of households in smaller urban centres of between 1000 and 100 000 population.

Individual capital cities and state balances

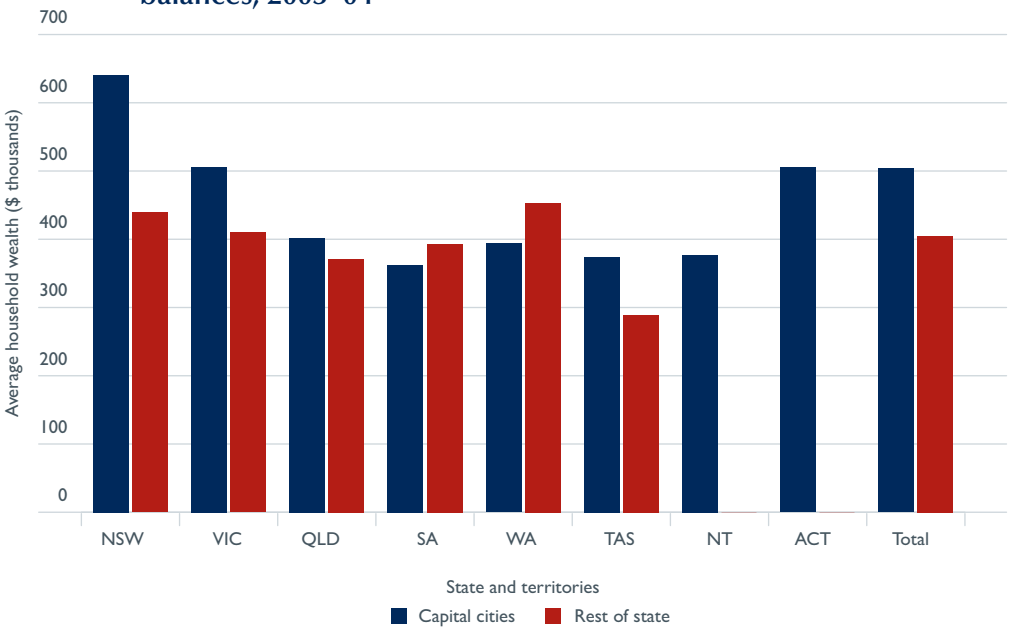
The capital city and state balance estimates from the 2003–04 SIH will provide the benchmark estimates of household wealth for BITRE's study. Therefore, a more detailed analysis of wealth is presented at this scale.

Average household wealth

Figure 5.9 shows how the average level of household wealth varies across Australia's capital cities and state balances. The only region for which average household wealth is significantly higher than the national average is Sydney at $640 600 per household. Average household wealth is significantly lower than the national average for many

of the capital city and state balance categories, and is particularly low for regional Tasmania ($289 200).

Figure 5.9 Average household wealth for individual capital cities and state balances, 2003–04



Note: Data for NT and ACT relate to the territory as a whole.
Source: ABS Cat. 6554.0

Capital cities tend to have higher household wealth than the state balances, and the divergence is particularly strong in NSW. However, both SA and WA go against the national trend, in that household wealth is lower in each state capital than in the rest of the State.

The main reason for higher wealth in regional SA is that average business assets ($88 500) are dramatically higher than Adelaide ($18 000). It is also worth noting that Adelaide has a higher *median* wealth than the rest of SA, suggesting that a relatively small proportion of very high wealth households may be having an important influence on the average wealth estimates for the rest of SA.

The main reason for higher wealth in regional WA is that business assets ($106 200 per household) are dramatically higher than Perth ($26 700). The value of shares is also higher in regional WA ($36 100) than in Perth ($13 200). Perth has a higher median wealth than the rest of WA, suggesting a relatively small proportion of very high wealth households may be having an important influence on the average wealth estimates in regional WA.

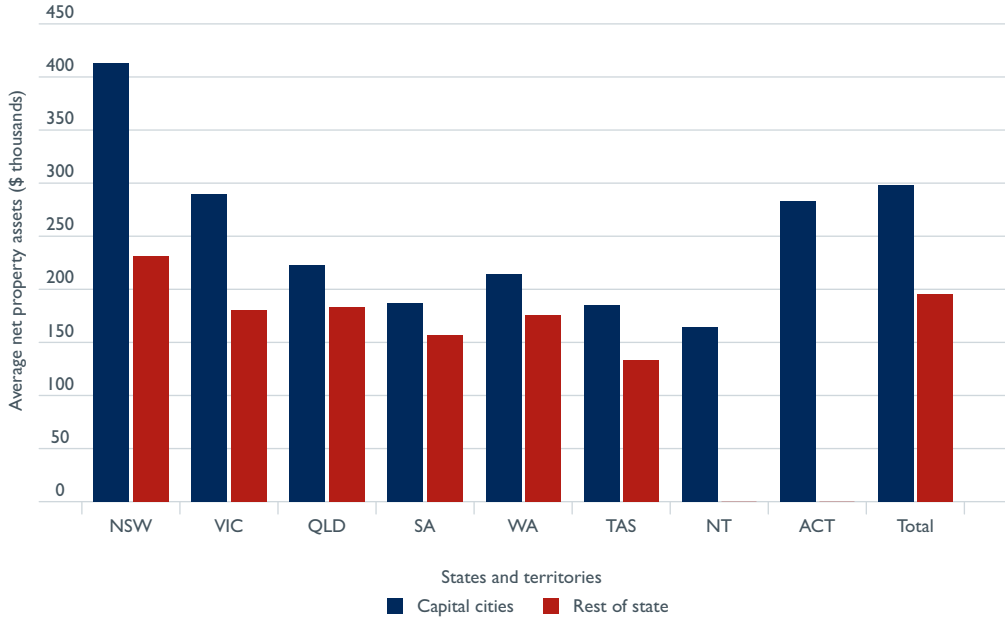
The distribution of wealth in regional SA and WA will be investigated in more detail later in this chapter.

Composition of wealth

Property assets are the single largest component of household wealth, and from Figure 5.10 it is clear that the net value of property assets varies widely across Australia, and shows greater spatial variation than household wealth.

The net value of property assets averages $412 700 in Sydney, $260 000 for Australia as a whole and only $149 000 in the NT and $133 300 in regional Tasmania. Within each state, the average value of net property assets is higher in the capital city than in the rest of the state, although the gap is greatest for NSW and Victoria.

Figure 5.10 Average net property assets for individual capital cities and state balances, 2003–04



Note: Data for NT and ACT relate to the territory as a whole.
Source: ABS Cat. 6554.0

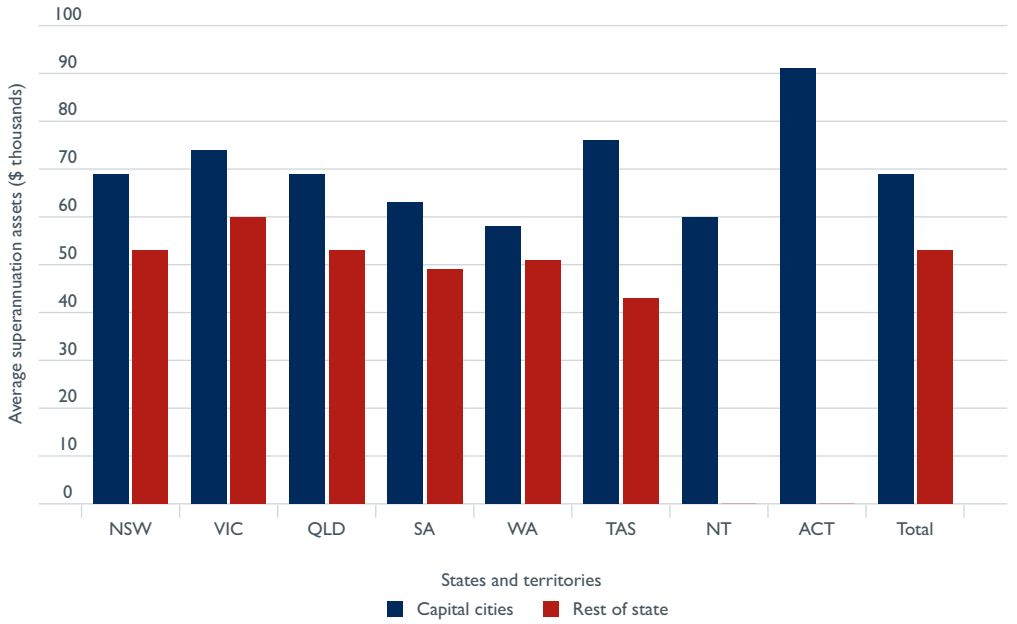
Property assets include both owner-occupied property and other properties (e.g. holiday homes, investment properties). Nationally, owner-occupied properties account for 80 per cent of the net value of property, but this varies from 65 per cent (Rest of WA) to 83 per cent (Adelaide).

For Australia as a whole, outstanding property debts account for 19 per cent of the value of property assets. The property debt-to-asset ratio is highest for the NT (34 per cent) and lowest for regional Tasmania (14 per cent). The NT result can be partly explained by its comparatively young population and the high proportion of households with a mortgage (41 per cent compared to the national average of 33 per cent). More generally, the property debt-to-asset ratio is reasonably constant, falling within the 16–23 per cent range for all other capital city and state balance categories.

Another component for which there is distinct variation is superannuation (see Figure 5.11). Average superannuation assets are much higher in the ACT ($91 500 per

household) than anywhere else in Australia, reflecting the fact that the Australian Government is the major employer. Melbourne also has average superannuation assets ($73 600) which significantly exceed the national average ($63 500), while the state balances of NSW, Queensland, SA, WA and Tasmania all have very low superannuation holdings. The capital cities have consistently higher average superannuation assets than their state balances.

Figure 5.11 Average superannuation assets for individual capital cities and state balances, 2003–04

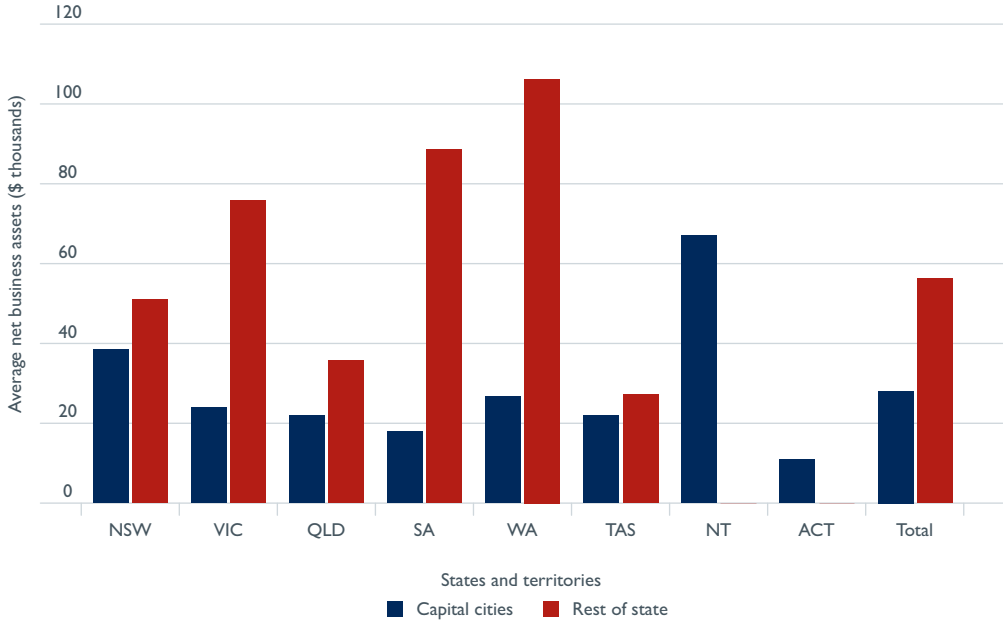


Note: Data for NT and ACT relate to the territory as a whole.
Source: ABS Cat. 6554.0

Net business assets make up only 8 per cent of household wealth, but Figure 5.12 shows that the average value of business assets varies enormously across regions. Business assets tend to be more important in regional areas, because the self-employed (particularly farmers) make up a much higher proportion of the population than they do in the capital cities. The gap between the capital city and state balance is smallest for Tasmania, NSW and Queensland. The gap is particularly large in SA and WA, where there are few large regional centres and a large proportion of the population of the state balance region is self-employed in agriculture or other industries. For example, the 2001 ABS *Census of Population and Housing* reveals that self-employment[33] accounts for 25 per cent of employment in regional SA and 23 per cent in regional WA, compared to the national self-employment rate of 17 per cent.

33. Self-employment refers to own account workers and employers.

Figure 5.12 Average net business assets for individual capital cities and state balances, 2003–04



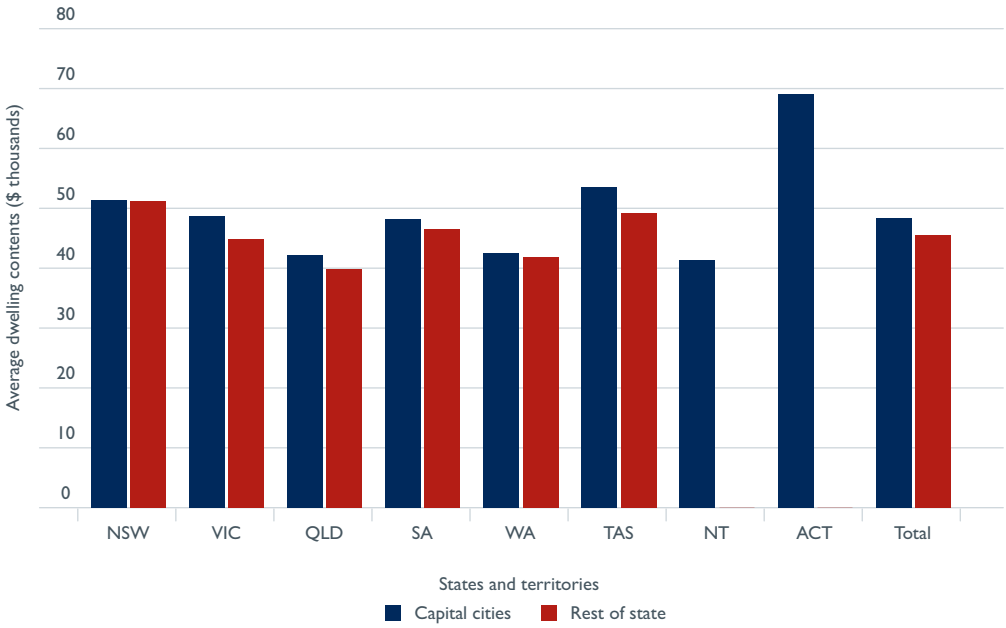
Note: The business assets measure is net of liabilities, and captures both own incorporated and own unincorporated businesses. Data for NT and ACT relate to the territory as a whole.

Source: ABS Cat. 6554.0

Dwelling contents account for about 10 per cent of household wealth, but are quite stable across regions (see Figure 5.13). However, the average value of dwelling contents is high in the ACT.

Vehicle assets average $14 500 per household and are also quite stable across regions. The average net value of vehicle assets is relatively high in regional WA ($18 200) and relatively low in Adelaide ($13 200).

Figure 5.13 Average dwelling contents for individual capital cities and state balances, 2003–04



Note: Data for NT and ACT relate to the territory as a whole.
Source: ABS Cat. 6554.0

One avenue through which wealth can contribute to economic wellbeing is by providing liquidity. On average, Australian households hold $40 200 of liquid assets, but this varies across capital cities and state balances (Figure 5.14). Sydney is the only region which significantly exceeds the national average, while Brisbane, Adelaide, Hobart, regional Victoria, regional Tasmania and the NT all have relatively low holdings of liquid assets. The two most important types of liquid assets are bank accounts and shares:

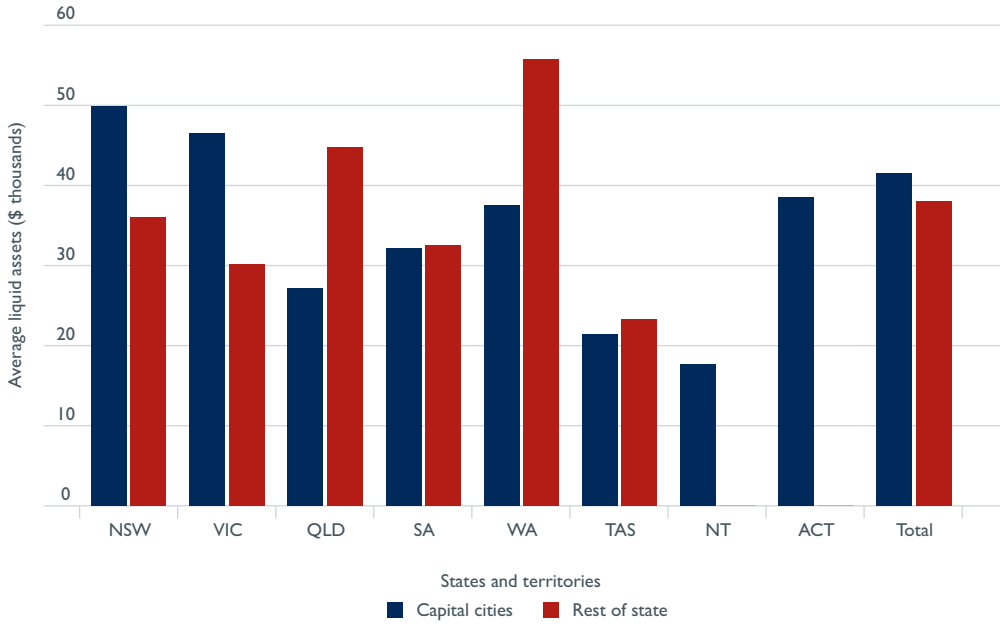
- The value of accounts held with financial institutions was significantly higher than the national average in Sydney and was particularly low in the NT, Hobart, Brisbane and regional Victoria.
- The value of shares was well below the national average for regional Tasmania, NT and Hobart.

The amount owing on study loans is also interesting. Melbourne, Adelaide and the ACT showed comparatively high average HECS debts. HECS debt was relatively low in most state balance categories.

Only Perth had average credit card debt levels which significantly exceeded the national average, while credit card debt was generally quite low in the state balance categories.

The extent of household indebtedness also varies spatially. Figure 5.15 shows that the debt-to-asset ratio of households is consistently higher in the capital cities than in the state balances. The NT and Perth stand out as having particularly high debt-to-asset ratios.

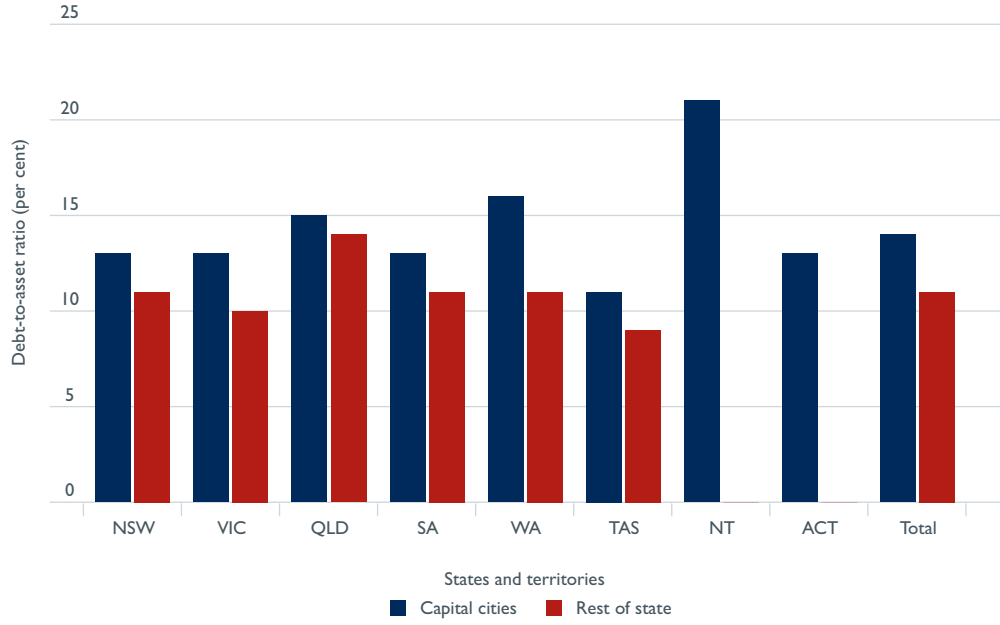
Figure 5.14 Average liquid assets for individual capital cities and state balances, 2003–04



Note: Accounts held with financial institutions, shares and debentures and bonds are considered liquid assets. The WA Balance estimate is not significantly different from the national average. Data for NT and ACT relate to the territory as a whole.

Source: ABS Cat. 6554.0

Figure 5.15 Debt-to-asset ratio for individual capital cities and state balances, 2003–04



Note: Data for NT and ACT relate to the territory as a whole.

Source: ABS Cat. 6554.0

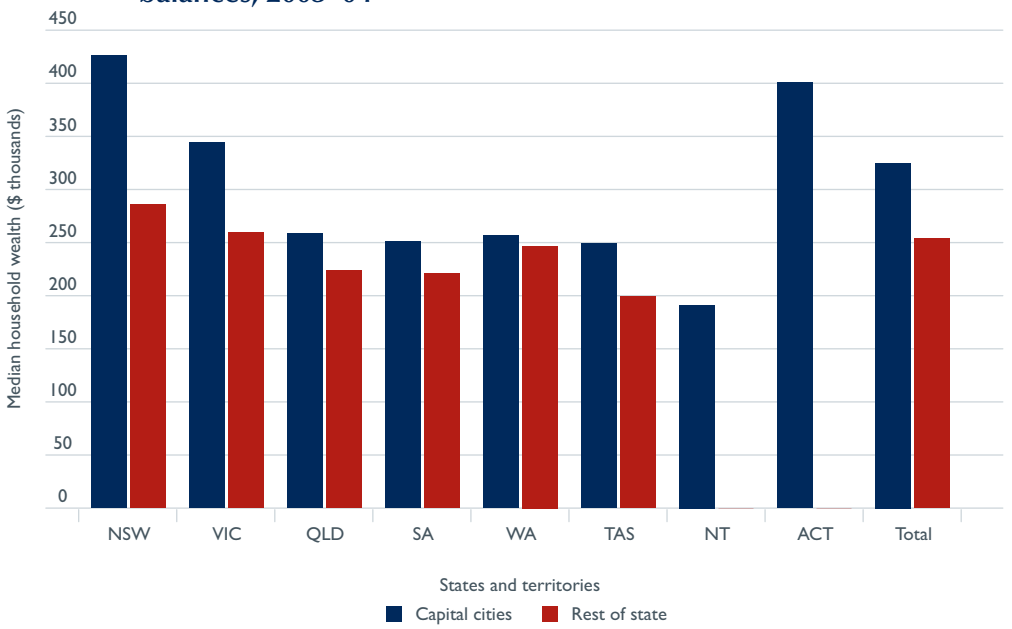
A lack of diversity in the wealth portfolio is most apparent for Sydney, where due to the city's high property prices, the owner-occupied dwelling accounts for 54 per cent of assets. In contrast, the owner-occupied dwelling accounts for only 28 per cent of assets in regional WA.

Distribution

The preceding discussion has focused on measures of average wealth at an aggregate regional scale, but the distribution of wealth within these regions is also of interest. The estimates of median wealth in Figure 5.16 provide a somewhat different picture to the average wealth measures in Figure 5.9:

- The capital cities have consistently higher median wealth than the state balances—the pattern is less consistent for average wealth.
- Median wealth is only slightly lower for the ACT than for Sydney ($401 000 versus $425 900), whereas ACT had much lower average wealth than Sydney ($504 900 versus $640 600).
- NT has the lowest median wealth, whereas Hobart, Adelaide, regional Tasmania and regional Queensland all have lower average household wealth than the NT.
- Regional WA has the fourth highest average wealth of the 14 capital city and state balance regions, but is ranked tenth in terms of median wealth. Regional SA also has a higher ranking on average wealth than on median wealth.
- Adelaide has the second lowest average wealth, but is ranked eighth in terms of median wealth.

Figure 5.16 Median household wealth for individual capital cities and state balances, 2003–04



Note: Data for NT and ACT relate to the territory as a whole.

Source: ABS Cat. 6554.0

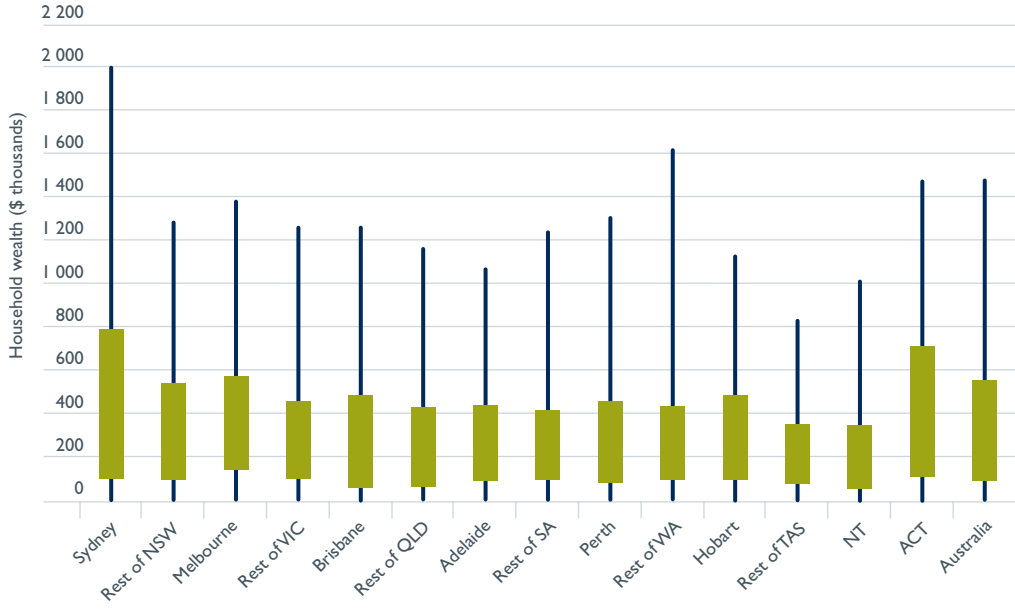
Figure 5.17 summarises the distribution of wealth in each of the capital city and state balance regions. Sydney stands out, with 5 per cent of households having net worth in excess of $2 million and one-quarter of households having net worth of more than $800 000.

Nationally, 10 per cent of households have net worth of more than $1 million. Figure 5.18 reveals that the proportion of 'millionaires' is highest for Sydney (17 per cent), and lowest for regional Tasmania (3 per cent), NT (5 per cent), Adelaide (6 per cent), regional SA (6 per cent) and regional Victoria (6 per cent).

The wealth distribution for regional WA is unusual in that there are a small number of very wealthy individuals, with 5 per cent of households having net worth of more than $1.6 million and 9 per cent being millionaires. Many of these high net worth households are farming families, and much of their wealth is tied up in the value of their land.

Figure 5.17 also reveals that the bottom 25 per cent of Melbourne households are better placed in terms of wealth than the bottom 25 per cent of households in other regions. The bottom 25 per cent of households do particularly poorly in Brisbane and the NT, and these two regions also have the highest proportions of households with less than $50 000 of net worth.

Figure 5.17 Overview of distribution of household wealth in individual capital cities and state balances, 2003–04

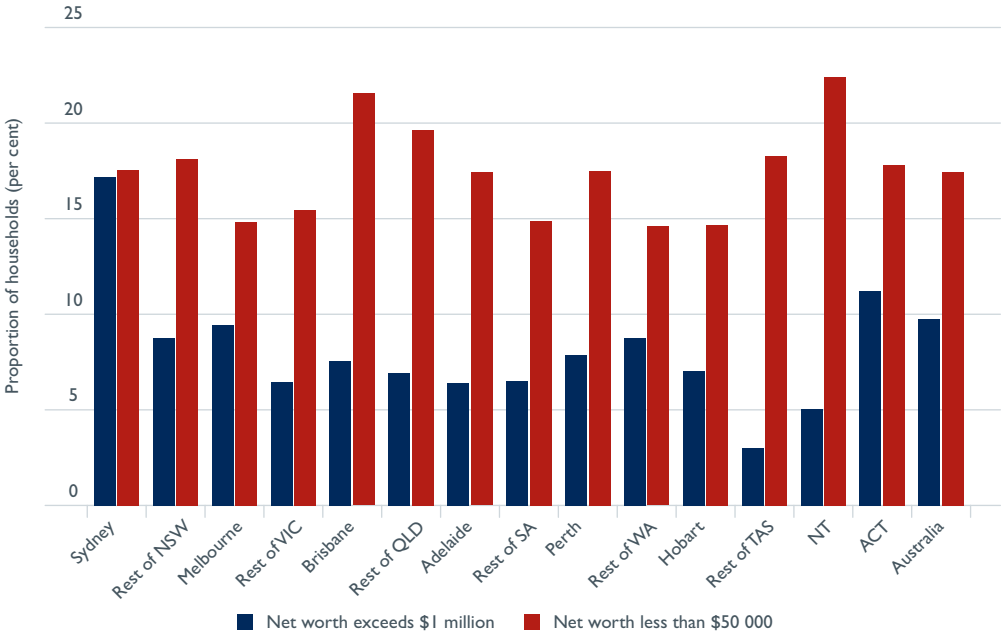


Notes: The green box represents the inter-quartile range: the top of the green box represents the 75th percentile and the bottom represents the 25th percentile of the wealth distribution for households in the relevant region. The top line ends at the 95th percentile, while the bottom line ends at the 5th percentile of the wealth distribution.

Source: BITRE analysis of ABS SIH 2003–04 CURF.

The Gini coefficient provides a summary measure of the degree of inequality of the wealth distribution, and results are presented in Table 5.3. Wealth inequality is highest in the NT and regional WA—this reflects the previous analysis which identified a much higher degree of wealth inequality in outer regional and remote Australia, than in the major cities or inner regional Australia. Wealth is more evenly distributed within the ACT, Adelaide, Hobart and regional Tasmania.

Figure 5.18 Proportion of households with high and low wealth, individual capital cities and state balances, 2003–04



Source: BITRE analysis of ABS SIH 2003–04 CURF.

Table 5.3 Gini coefficient for household wealth, individual capital cities and state balances, 2003–04

Part of state	*Gini coefficient*
Sydney	0.58
Rest of NSW	0.55
Melbourne	0.56
Rest of VIC	0.57
Brisbane	0.57
Rest of QLD	0.57
Adelaide	0.52
Rest of SA	0.57
Perth	0.56
Rest of WA	0.61
Hobart	0.52
Rest of TAS	0.53
NT	0.63
ACT	0.52
Australia	0.62

Source: BITRE analysis of ABS SIH 2003−04 data.

An interesting feature of this table is that the Gini coefficients for each of the capital city and state balance regions (except the NT) lie below the national Gini coefficient. This implies that there is less wealth inequality *within* these regions, than *within* Australia as a whole, and that variation in wealth *between* these capital city and state balance regions makes an important contribution to the overall level of wealth inequality in Australia.

Summary

Owner-occupied property assets and net business assets are the main drivers of spatial variation in household wealth. High property prices in the major capitals, especially Sydney, are reflected in high owner-occupied property assets and high average wealth. Rural areas are characterised by high rates of farm business ownership, which lead to high business assets and high average wealth. It is the smaller urban centres of between 1000 and 100 000 population which have the lowest average wealth, as property values are low and this is not offset by high rates of business ownership.

The chapter also revealed that the distribution of wealth differs across regions. More remote parts of Australia, such as regional WA and the NT, tend to have a relatively unequal distribution of wealth, while wealth is much more equally distributed within Tasmania and the ACT.

Key messages

At the state and territory scale, net worth per household is highest for NSW ($563 200) and lowest for Tasmania ($324 900) and the NT ($344 200).

Average household wealth is much higher in the capital cities ($503 600) than in the rest of Australia ($405 100).

At the remoteness class scale, average net worth is greatest in the major cities ($496 500) and lowest for outer regional Australia ($363 900).

Outer regional and remote areas of Australia have low net worth and a relatively uneven distribution of net worth across households.

For urban centre size categories, average net worth is lowest in small urban centres with populations between 1000 and 100 000, due to the low value of property assets. Average net worth is highest in rural Australia, followed by major urban areas.

Rural households have a very distinctive wealth profile, characterised by high rates of farm business ownership.

Across individual capital cities and state balances, average wealth is highest for Sydney ($640 600) and lowest for regional Tasmania ($289 200).

Within each state, the average value of net property assets is higher in the capital city than in the rest of the state.

Business assets tend to be more important in regional areas, because the self-employed (particularly farmers) make up a much higher proportion of the population than they do in the capital cities.

Brisbane, Adelaide, Hobart, regional Victoria, regional Tasmania and the NT all have relatively low holdings of liquid assets.

The debt-to-asset ratio is consistently higher in the capital cities than in the rest of the state. The NT and Perth have especially high debt-to-asset ratios.

The proportion of millionaires is highest for Sydney (17 per cent) and lowest for regional Tasmania (3 per cent).

Wealth inequality is highest in the NT and regional WA. Wealth is more evenly distributed within the ACT, Adelaide, Hobart and regional Tasmania.

Owner-occupied property assets and net business assets are the main drivers of spatial variation in household wealth.

Chapter 6 Small area estimates of household wealth

This chapter analyses BITRE's new small area estimates of average household wealth for 2003–04. The small area estimation methodology was outlined in Chapter 3, while the detailed estimates are available from the BITRE's *Household Wealth Database*, which can be accessed via <www.bitre.gov.au>.

The analysis is undertaken at the SLA scale, using 2001 ASGC boundaries. More specifically, this chapter focuses on the household wealth estimates for the 1135 in-scope SLAs which contain 500 or more households.[34]

How does wealth vary across regions?

While the available data has not permitted an analysis of the distribution of wealth *within* each SLA, this section provides a summary of the distribution of wealth *across* Australia's regions. Average household wealth varies a great deal across Australia's regions, ranging from a low of $154 300 for Mount Morgan shire in Queensland, to a high of $1.93 million for Peppermint Grove shire in Perth.

Figure 6.1 illustrates the distribution of the average wealth estimates for SLAs using a frequency histogram. The distribution peaks in the $400 000 to $420 000 range, with 99 SLAs having average household wealth in this range. The middle 50 per cent of SLAs have average wealth of between $343 000 and $493 700. However, the distribution has a long tail and is positively skewed.

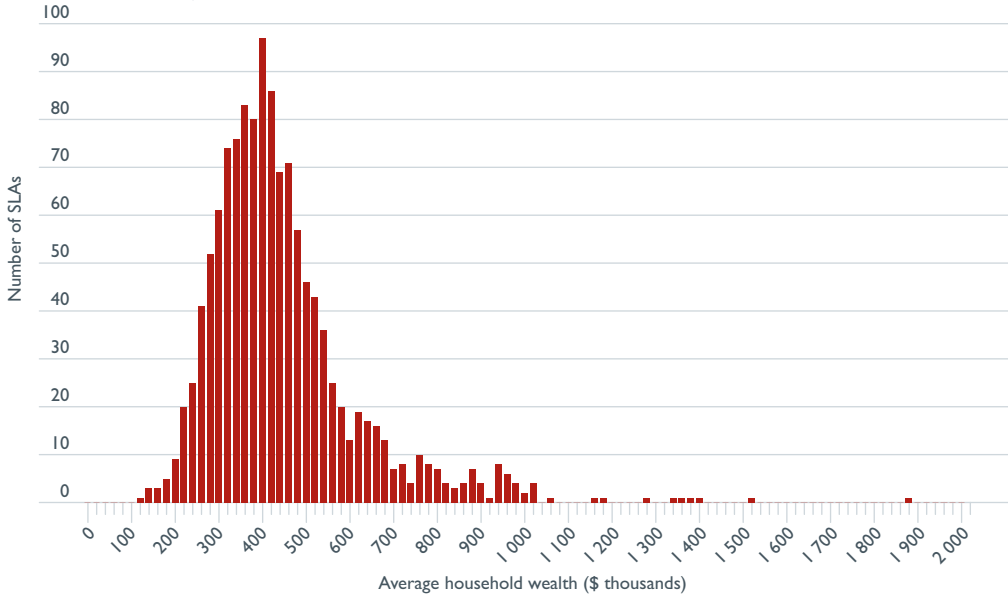
Across the full set of 1262 in-scope SLAs, the median wealth estimate was $420 300. This is lower than the national wealth average of $467 600 per household. The spatial distribution of net worth is positively skewed, with 65 per cent of the SLA estimates lying below the national average. Table 6.1 provides some summary measures which describe the spatial distribution of net worth and its major components.

The wealth component which exhibits the greatest degree of spatial variation, based on the coefficient of variation, is net business assets. Average owner-occupied property assets and average share and trust assets also show considerable variation across SLAs. Dwelling contents exhibit the least spatial variation, while vehicle and superannuation assets also have relatively low coefficients of variation, in comparison to net worth.

All of the wealth components in Table 6.1 display a positively skewed distribution. The distribution of other property debts is the most symmetrical. Net business assets, shares and trusts and owner-occupied property assets have a more positively skewed distribution than net worth.

34. Note that the maps in this chapter represent all SLAs, regardless of the number of households.

Figure 6.1 Frequency histogram of average household wealth estimates for SLAs, 2003–04



Notes: Based on 1262 in-scope SLAs. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Table 6.1 Summary statistics for distribution of net worth and components across SLAs, 2003–04

Wealth component	*5th percentile ($ thousands)*	*Median ($ thousands)*	*95th percentile ($ thousands)*	*Coefficient of variation^*	*Skewness**	*Gini coefficient*
Interest earning assets	10.8	19.7	38.3	0.42	2.2	0.22
Shares and trusts	5.4	19.0	79.2	0.95	2.9	0.45
Superannuation	40.6	58.3	94.0	0.26	0.9	0.13
Owner-occupied property assets	64.3	171.5	412.6	0.64	2.4	0.28
Other property assets	31.8	60.1	108.7	0.36	0.8	0.20
Net business assets	9.5	31.8	283.8	1.41	3.1	0.41
Dwelling contents	36.0	45.2	67.1	0.19	1.6	0.07
Vehicle assets	12.5	18.7	28.9	0.26	0.6	0.11
Owner-occupied property debts	7.2	30.5	68.6	0.56	0.8	0.24
Other property debts	7.0	16.2	28.3	0.39	0.3	0.20
Study loan debt	0.5	1.0	2.5	0.54	1.4	0.26
Credit card debt	0.9	1.7	2.8	0.34	0.5	0.16
Vehicle loans	1.8	3.0	5.1	0.33	0.6	0.15
Net worth	256.5	420.3	800.6	0.39	2.1	0.20

Notes: Based on 1262 in-scope SLAs. Excludes very remote SLAs and discrete indigenous communities.
^ Calculated as the standard deviation divided by the mean of the distribution.
* A value of zero means the distribution is symmetrical, a positive value means the distribution is skewed to the right (positively skewed).
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Gini coefficients provide a summary measure of the inequality of a distribution (see Box 4.1 on page 56 for further information). Net business assets and share and trust assets have a relatively unequal distribution across SLAs, while dwelling contents and vehicle assets are quite equally distributed.

A key point to note is that there is a much more equal distribution of wealth across SLAs than across households (see Table 4.1). This is consistent with a key finding of Chapter 4, that only a small proportion of total variation in wealth across households could be attributed to broad area of residence.

Average household wealth

Wealthiest and least wealthy regions

Table 6.2 presents the 20 SLAs with the highest average household wealth estimates for 2003–04, while Table 6.3 presents the 20 SLAs with the lowest average household wealth estimates. Both tables incorporate some additional regional indicators to provide context and aid understanding.

From Table 6.2 it is evident that the capital cities dominate the top 20 list for average household wealth. Nine of the top 20 SLAs are located within Sydney, three in Perth, four in Melbourne, two in Brisbane and one in Canberra. The sole exception is the Lake Grace SLA which is located in WA's wheatbelt. While only Lake Grace features in the top 20, many of the other SLAs in this region also have high wealth, because a high proportion of households own farm businesses in these SLAs. Sorensen (2004) highlighted the Lakes SSD, to which Lake Grace belongs, as having a particularly high propensity to receive interest and dividend income.

Average household wealth in Peppermint Grove, a Perth riverfront suburb, lies well above all of the other SLAs, but this average wealth estimate applies to a relatively small number of households (563). Seven of the ten SLAs in which average wealth tops $1 million are located in Sydney, and some of those contain more than 20 000 households (Ku-ring-gai, Woollahra, Pittwater, Willoughby).

Wealth in these regions is, to a large extent, attributable to high property values. In 2003–04, the average value of owner-occupied property topped $650 000 in all of the top 20 SLAs, apart from Lake Grace. In Ku-ring-gai and Fig Tree Pocket the high property values are combined with especially high rates of home ownership, but this is not generally the case, with Woollahra, Mosman and Manly emerging as very wealthy areas despite their below average rates of home ownership.

Apart from Lake Grace, all of the top 20 have above average mortgages outstanding on their owner-occupied property. However, the average mortgage figures are relatively trivial in comparison to the value of the owner-occupied dwelling.

Another common feature of the top 20 SLAs is that they all have an above average proportion of self-employed persons. This is of relevance because many of the self-employed own significant business assets. The stand out here is Lake Grace, where half of all employed persons are self-employed, mainly in agriculture.

Table 6.2 Average household wealth, top 20 regions, 2003–04

SLA	State/ territory	Average household wealth, 2003–04 ($ thousands)	Number of households, 2003–04	Average property price, 2003–04 ($ thousands)	Home ownership rate, 2003–04 (per cent)	Average mortgage, 2003–04 ($ thousands)	Self-employment rate, 2001 (per cent)	Indigenous population share, 2001 (per cent)	Median age, 2001 (years)	Real income per taxpayer 2003–04 ($ thousands)	Proportion of households in public housing, 2001 (per cent)	Unemployment rate, 2001 (per cent)
Peppermint Grove	WA	1 926.8	563	1 949.7	75	46.9	34	1	34	87 152	0	4.9
Hunter's Hill	NSW	1 530.1	4 654	1 344.3	75	75.9	28	0	39	94 370	7	3.9
Woollahra	NSW	1 388.4	24 191	1 255.5	61	46.1	28	0	37	101 265	0	3.6
Mosman	NSW	1 386.5	12 209	1 295.1	63	59.7	24	0	38	111 813	1	3.1
Ku-ring-gai	NSW	1 370.1	35 201	1 037.2	88	83.1	23	0	40	80 730	0	3.5
Bayside: Brighton	VIC	1 187.2	14 079	887.3	80	58.1	27	0	40	78 047	1	4.1
Pittwater	NSW	1 178.0	21 060	1 008.6	80	84.3	26	0	38	60 332	0	3.1
Manly	NSW	1 024.6	16 455	1 079.1	63	61.4	20	0	36	68 003	2	3.9
Nedlands	WA	1 021.8	7 774	873.4	71	52.5	26	0	40	78 722	2	4.3
Willoughby	NSW	1 000.6	24 473	937.9	67	66.5	19	0	36	72 600	1	4.2
Chelmer	QLD	996.8	964	865.1	80	60.2	22	0	39	56 881	0	4.8
Cottesloe	WA	985.9	3 290	820.5	65	40.7	27	0	38	86 844	1	5.1
Boroondara: Camberwell North	VIC	983.6	16 046	677.0	84	50.4	21	0	40	62 944	0	4.2
Lane Cove	NSW	982.6	12 660	958.7	67	68.7	18	0	36	72 687	2	3.4
Lake Grace	WA	968.7	653	106.4	70	9.1	51	2	35	44 983	3	2.9
Stonnington: Malvern	VIC	958.5	18 558	739.5	70	50.9	22	0	36	72 784	1	4.5
Red Hill	ACT	950.8	1 166	851.1	64	44.2	21	1	39	74 884	13	5.0
Fig Tree Pocket	QLD	938.5	1 064	726.3	86	70.6	23	0	38	62 490	0	4.3
Strathfield	NSW	915.1	10 351	931.3	65	45.4	21	0	36	48 914	5	6.6
Manningham East	VIC	905.6	4 676	589.6	94	85.8	27	0	35	57 989	0	3.0
Australia		467.6	7 735 838	355.2	70	40.0	17	2	35	44 101	4	7.4
Top 20 average		1 130.0	11 504	946.7	73	58.0	25	0	38	73 722	2	4.1

Note: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities.

Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database*, APM house price data and 2001 ABS' *Census of Population and Housing* data.

The important influence that age has on wealth was one of the key messages of Chapter 4. Wealth tends to rise with age at least up until retirement. While the national median age is 35, the median age for the top 20 ranges from 34 to 40. The wealthiest SLAs tend to have a somewhat older age structure than the general Australian population.

Another feature of Table 6.2 is that average incomes exceed the national average for all of the top 20. In 2003–04, Mosman had the highest real income per taxpayer (RIPT), but was ranked fourth in terms of wealth. In contrast, Peppermint Grove is ranked more highly in terms of wealth (1st) than income (4th). While high income regions are more likely than low income regions to have high average wealth, not all wealthy regions have particularly high incomes. For example, Strathfield (Sydney) and Lake Grace (WA) have moderate RIPT, but very high average wealth.

Other features that the top 20 SLAs have in common include a relatively small proportion of indigenous persons and a low unemployment rate. The top 20 regions also generally have a relatively small proportion of households living in public housing. However, Red Hill in the ACT and Strathfield and Hunter's Hill in Sydney are exceptions which have significant public housing.

Table 6.3 presents the 20 SLAs with the lowest household wealth in 2003–04. The bottom 20 contains a mix of SLAs from capital cities and regional areas. Therefore, the capital cities contain some of the least wealthy areas as well as most of the wealthiest SLAs. Only four states or territories feature, namely Queensland (10 representatives), the NT (4), SA (4) and Tasmania (2). The strong representation of Queensland can partly be attributed to the fact it accounts for 35 per cent of the SLAs for which household wealth estimates could be produced.

A number of SLAs in the bottom 20 form geographic clusters:

- The Playford-Salisbury region to the north of Adelaide has three SLAs in the bottom 20.
- The Logan LGA, to Brisbane's south, is well represented with Woodridge, Kingston, Marsden and Loganlea all featuring in the bottom 20. While Eagleby is part of the Gold Coast LGA, it is located near the boundary of the Logan LGA.
- Inala and Wacol are neighbouring SLAs in Brisbane's south west. The Wacol SLA contains large prison and hospital complexes.
- Garbutt and Vincent are located within Townsville. Garbutt includes the city's airport and a Royal Australian Air Force (RAAF) base, and both SLAs have a high number of defence households.
- Moulden, Gray, Bakewell and Palmerston Balance are all located in the Palmerston LGA on the outskirts of Darwin.

Brighton is on Hobart's urban fringe. The three remaining SLAs in the bottom 20 are regional towns: Mount Morgan (QLD), Whyalla (SA) and George Town Part A (Tasmania). Mount Morgan has particularly low property values, with the average owner-occupied dwelling valued at just $59 000, compared to the national average of $355 200. Low property values are also evident in Whyalla ($120 100) and George Town Part A ($136 100).

In fact, all of the bottom 20 SLAs have property values well below the national average. Generally, home ownership rates are relatively low in the least wealthy regions. However, there are a number of exceptions to this pattern, such as Mount Morgan (with an ownership rate of 77 per cent), Palmerston Balance (75 per cent), Bakewell (80 per cent) and Salisbury Inner North (72 per cent).

Average mortgages also tend to be relatively low in the bottom 20 regions. The key exceptions are the four SLAs from the Palmerston LGA which all have above average mortgages. Residents of Palmerston Balance owe an average of $107 900 on their owner-occupied dwelling.

While the wealthiest SLAs tended towards an older age profile, the majority of the least wealthy SLAs have a relatively young age structure. For example, residents of Moulden, where the median age is just 25, have had limited time to accumulate wealth. Mount Morgan does not fit this profile and has a median age of 43.

Indigenous persons make up a much greater share of the population in the least wealthy SLAs than in the wealthiest SLAs. The indigenous population share tops 10 per cent for Garbutt in Townsville and Moulden, Bakewell and Gray in Darwin. The Brisbane suburbs in Table 6.3 also have substantial Maori and Pacific Islander populations.

RIPT lies below the national average of $44 101 for all of the regions in Table 6.3. While low income regions are more likely than high income regions to have low average wealth, the relationship is not a particularly close one. For example, Palmerston Balance has the tenth lowest average wealth, but two-thirds of the in-scope SLAs have lower average incomes.

Another common feature of the bottom 20 SLAs is that they all have a below average proportion of self-employed persons, and this is likely to be reflected in low holdings of business assets.

Many of the bottom 20 SLAs have substantial public housing, with more than 30 per cent of households renting public housing in Inala, Wacol, Garbutt and Moulden. In contrast, there is minimal public housing in Mount Morgan, Palmerston Balance and Bakewell.

The least wealthy regions also tend to have high rates of unemployment. The only exceptions are the Darwin SLAs of Palmerston Balance and Bakewell. In 2001, the unemployment rate topped 20 per cent for the four least wealthy SLAs (Mount Morgan, Playford West Central, Elizabeth and Woodridge), as well as for Inala and Eagleby.

Table 6.4 is also focused on the extremes of the household wealth distribution. It lists the top and bottom three regions for each of the capital city and rest of state categories. Tasmania, NT and the ACT have not been disaggregated between capital city and rest of state.

The wealthiest SLAs in each state are generally located in the capital cities. However, the wealthiest Adelaide SLA (Burnside South West) has similar average wealth to the top-ranked SLA in the rest of SA (Barunga West). The difference between the wealthiest Brisbane SLA (Chelmer) and the wealthiest SLA in the rest of Queensland (Bundall) is not great either.

Table 6.3 Average household wealth, bottom 20 regions, 2003–04

SLA	State/ territory	Average household wealth, 2003–04 ($ thousands)	Number of households, 2003–04	Average property price, 2003–04 ($ thousands)	Home ownership rate, 2003–04 (per cent)	Average mortgage, 2003–04 ($ thousands)	Self-employment rate, 2001 (per cent)	Indigenous population share, 2001 (per cent)	Median age, 2001 (years)	Real income per taxpayer 2003–04 ($ thousands)	Proportion of households in public housing, 2001 (per cent)	Unemployment rate, 2001 (per cent)
Mount Morgan	QLD	154.3	1 345	59.0	77	7.8	10	14	43	35 850	1	23.4
Playford: West Central	SA	157.2	4 892	132.3	52	18.9	4	7	29	35 397	28	22.3
Playford: Elizabeth	SA	157.7	10 818	125.5	53	13.8	3	8	35	33 760	27	21.2
Woodridge	QLD	160.1	7 226	154.4	44	12.9	5	9	31	31 710	15	20.0
Kingston	QLD	175.6	4 471	157.1	53	19.7	5	10	29	31 622	18	17.1
Wacol	QLD	179.7	980	188.0	36	9.8	9	11	30	35 842	35	18.7
Inala	QLD	193.6	4 654	171.1	41	10.7	7	8	32	34 551	39	20.1
Marsden	QLD	196.2	5 882	184.1	58	33.8	3	11	26	33 069	7	12.9
Palmerston Balance	NT	198.3	1 192	177.6	74	107.9	9	9	28	42 040	0	3.2
Moulden	NT	201.1	1 138	172.3	53	49.6	21	9	25	41 810	33	12.4
Whyalla	SA	202.1	9 269	120.1	60	23.1	3	10	35	41 990	28	13.1
Garbutt	QLD	202.7	1 018	132.6	41	19.3	13	9	32	41 289	36	9.7
Vincent	QLD	205.7	893	148.2	38	24.8	9	4	24	41 289	26	12.2
Gray	NT	207.1	1 264	191.6	53	49.0	15	9	28	41 810	30	11.0
Brighton	TAS	210.7	4 692	143.0	61	29.3	7	11	29	35 960	30	16.3
Eagleby	QLD	212.0	3 418	175.6	48	19.7	4	13	30	36 092	13	20.5
Bakewell	NT	215.2	1 303	186.8	80	92.4	10	6	26	43 327	2	5.4
Loganlea	QLD	218.3	2 769	214.3	52	33.6	3	13	29	33 475	18	13.7
George Town Part A	TAS	218.6	2 403	136.1	66	14.3	3	12	36	38 426	13	13.2
Salisbury Inner North	SA	221.4	8 919	161.7	72	35.4	2	9	29	34 701	12	11.6
Australia		467.6	7 735 838	355.2	70	40.0	17	2	35	44 101	4	7.4
Bottom 20 average		194.4	3 927	156.6	56	31.3	7	10	30	37 200	21	14.9

Note: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities.

Source: BITRE analysis based on BITRE *Household Wealth Database,* BITRE *Taxable Income Database,* APM house price data and 2001 ABS' *Census of Population and Housing* data.

The wealthiest suburbs in Sydney, Melbourne, Brisbane and Perth featured in Table 6.2 and have previously been discussed. While these cities all have at least two SLAs with average wealth of more than $900 000, the wealthiest Adelaide suburb (Burnside South West) has average wealth of $649 000. The three wealthiest Adelaide SLAs are all located to the east of the city centre and have higher property values than the rest of Adelaide.

The wealthiest SLAs in Tasmania and NT have average wealth of less than $500 000. In Tasmania, the wealthiest SLAs are Hobart Remainder (i.e. the Hobart LGA minus the city centre), and the Kingborough shire to the immediate south of Hobart. In the NT, the wealthiest SLA is in Alice Springs. Litchfield Part B on Darwin's outer fringe and Fannie Bay, to the north of the city centre, also have moderately high wealth. All three have above average business assets, while Fannie Bay also has high property values.

In the ACT, the three wealthiest SLAs adjoin one another and are located in Canberra's inner south (Red Hill, Yarralumla, Deakin). All three have particularly high property values.

Outside of the capital cities, the SLAs with the highest wealth are not of a single type:

- Several coastal towns feature, including Kiama in NSW, Robe in SA, and Lorne, Aireys Inlet and Anglesea (in Surf Coast West) and Queenscliffe in Victoria. Kiama, Queenscliffe and Surf Coast West have very high property values and high rates of home ownership. Robe households have higher property values than most other SLAs in regional SA, together with substantial business assets.
- Bundall, Benowa and Broadbeach Waters are three neighbouring Gold Coast canal suburbs with very high average wealth. These SLAs have very high property values, high rates of home ownership and an older age profile. Residents tend to have significant bank account, share and trust assets.
- Predominantly rural SLAs are also well represented, such as Conargo and Wagga Wagga Part B in NSW, Moyne North West in Victoria, Barunga West and Yorke Peninsula North in SA and Lake Grace, Kojonup and Gnowangerup in WA. Agriculture accounts for at least one-third of employment in each of these SLAs, and their high average wealth estimates is largely due to substantial net business assets from owner operated farms.

In the capital cities, the least wealthy SLAs are generally in the outer suburbs or outlying commuter settlements. Examples include: Campbelltown in Sydney; Cranbourne in Melbourne; Woodridge in Brisbane; Elizabeth in Adelaide; Kwinana in Perth; Brighton in Hobart; Palmerston Balance in Darwin; and Charnwood in Canberra. These outer suburban SLAs typically have relatively youthful populations and below average property values.

Several inner suburban locations also have low average wealth. Examples include Sydney Remainder, Victoria Park in Perth, and Braddon in the ACT. All three have low home ownership rates.

Table 6.4 Average household wealth, top and bottom three regions for capital cities and state balances, 2003–04

Highest average wealth			*Lowest average wealth*		
SLA	*Number of households*	*Average wealth ($ thousands)*	*SLA*	*Number of households*	*Average wealth ($ thousands)*
Sydney					
Hunter's Hill	4 654	1 530.1	Blacktown South West	29 034	297.1
Woollahra	24 191	1 388.4	Campbelltown	48 232	359.2
Mosman	12 209	1 386.5	Sydney Remainder	12 251	370.0
Rest of NSW					
Conargo	555	803.8	Broken Hill	8 755	255.2
Kiama	7 722	745.2	Richmond Valley: Casino	4 117	285.4
Wagga Wagga Part B	1 661	692.1	Glen Innes	2 482	287.0
Melbourne					
Bayside: Brighton	14 079	1 187.2	Casey: Cranbourne	21 010	277.7
Boroondara: Camberwell North	16 046	983.6	Melton Balance	13 072	301.2
Stonnington: Malvern	18 558	958.5	Wyndham West	6 766	314.6
Rest of Victoria					
Queenscliffe	1 306	756.2	Latrobe: Moe	7 578	244.1
Moyne North West	1 092	756.0	Latrobe: Morwell	8 813	257.1
Surf Coast West	3 509	680.7	Gr. Bendigo: Eaglehawk	3 617	279.3
Brisbane					
Chelmer	964	996.8	Woodridge	7 226	160.1
Fig Tree Pocket	1 064	938.5	Kingston	4 471	175.6
Brookfield (incl. Mt Coot-tha)	1 152	886.8	Wacol	980	179.7
Rest of Queensland					
Bundall	1 668	859.1	Mount Morgan	1 345	154.3
Broadbeach Waters	3 244	777.9	Garbutt	1 018	202.7
Benowa	2 566	761.4	Vincent	893	205.7
Adelaide					
Burnside South West	8 961	649.0	Playford West Central	4 892	157.2
Walkerville	3 015	636.8	Playford: Elizabeth	10 818	157.7
Burnside North East	8 941	621.3	Salisbury: Inner North	8 919	221.4
Rest of SA					
Barunga West	1 080	639.3	Whyalla	9 269	202.1
Robe	566	586.9	Port Augusta	5 459	233.6
Yorke Peninsula North	3 160	577.5	Port Pirie City	5 850	236.6
Perth					
Peppermint Grove	563	1 926.8	Kwinana	8 245	225.7
Nedlands	7 774	1 021.8	Wanneroo South	13 518	272.4
Cottesloe	3 290	985.9	Victoria Park	13 449	282.7
Rest of WA					
Lake Grace	653	968.7	Coolgardie	1 418	254.4
Kojonup	844	810.7	Geraldton	7 429	288.8
Gnowangerup	554	788.7	Collie	3 414	289.2
Tasmania					
Hobart Remainder	21 113	485.6	Brighton	4 692	210.7
Kingborough Part A	10 365	444.2	George Town Part A	2 403	218.6
Kingborough Part B	1 163	399.6	Derwent Valley Part B	1 087	222.0
Northern Territory					
Alice Springs: Heavitree	801	498.4	Palmerston Balance	1 192	198.3
Litchfield Part B	5 169	485.9	Moulden	1 138	201.1
Fannie Bay	1 085	462.1	Gray	1 264	207.1
Australian Capital Territory					
Red Hill	1 166	950.8	Belconnen Town Centre	1 449	281.3
Yarralumla	1 277	890.9	Charnwood	1 239	345.8
Deakin	1 090	857.1	Braddon	1 776	358.9

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

While Chapter 5 reported that the capital cities have higher wealth, overall, than the rest of Australia, there is clearly a great deal of variation in wealth both across the capital cities and within individual capital cities. Perth contains more spatial variation in household wealth than the other capital cities.

Outside of the capital cities, the list of the least wealthy SLAs largely consists of mid-sized regional centres, many of which have a declining heavy industry base.

- Several mining towns feature, namely Broken Hill in NSW and Coolgardie and Collie in WA. All three experienced significant employment declines between 1991 and 2001. Mount Morgan is a former mining town: the mine closed in 1990 and population and employment continued to decline through the 1990s.
- Moe and Morwell in Victoria's Latrobe Valley and Port Augusta in SA all have coal-fired power stations and experienced major declines in employment in the electricity industry between 1991 and 2001. Port Augusta also experienced significant declines in rail transport employment over the period.
- Whyalla and Port Pirie in SA and George Town Part A in Tasmania contain major metal manufacturing operations, which experienced substantial employment declines between 1991 and 2001.
- The NSW town of Casino is specialized in food, beverage and tobacco manufacturing and experienced substantial declines in employment in this industry between 1991 and 2001.

The aforementioned SLAs all have relatively low property values. This is particularly the case for Mount Morgan ($59 000), Coolgardie ($95 200), Collie ($102 700) and Broken Hill ($102 800). In 2001, unemployment rates were well above the national average for all of the aforementioned SLAs, apart from Coolgardie.

Not all of the regional SLAs with low average wealth fit this profile.

- Glen Innes and Geraldton have experienced gradual population and employment declines over an extended period, which cannot be attributed to the fortunes of any single industry. These two SLAs have low property values, high unemployment rates and low average incomes.
- Garbutt and Vincent are Townsville suburbs where many residents are employed in the defence forces, and the defence force is a growing industry within Townsville. These SLAs have low wealth because the population is relatively young, property values are relatively low and most households do not own their own home.
- Eaglehawk and Brighton are both part of a reasonably large urban centre (Bendigo and Hobart respectively), but have the lowest property values of all SLAs in their respective urban centre. Both have experienced strong growth in recent times, but have high unemployment rates and low incomes.

Spatial differences

It is important that the analysis of wealth does not focus unduly on the extremes of the distribution. Table 6.5 identifies a selection of SLAs that have average household wealth within each $100 000 range. Outer suburbs of the capital cities, mining areas

and regional centres are well represented in the low average wealth categories. Outside of the capital cities, the regions in which average wealth tops $500 000 per household, are typically coastal SLAs (e.g. Byron, Kiama, Esperance) or agriculturally-based SLAs (e.g. Jerilderie, Boyup Brook, West Wimmera).

Table 6.5 Selection of SLAs in each household wealth interval, 2003–04

Wealth interval	*Capital cities: selected SLAs*	*State and territory balances: selected SLAs*
Less than $200 000 per household	Inala QLD, Woodridge QLD, Kingston QLD, Playford: Elizabeth SA, Playford West Central SA	Mount Morgan QLD
$200 000 to $300 000 per household	Casey: Cranbourne VIC, Ipswich East QLD, Caboolture Central QLD, Salisbury North East SA, Armadale WA, Glenorchy TAS, Coconut Grove NT	Latrobe: Moe VIC, Rockhampton QLD, Cloncurry QLD, Roxby Downs SA, Coolgardie WA, West Coast TAS, Devonport TAS, Katherine NT
$300 000 to $400 000 per household	South Sydney NSW, Brimbank: Sunshine VIC, Inner Melbourne VIC, Spring Hill QLD, Marion North SA, Canning WA, Clarence TAS, Nightcliff NT	Deniliquin NSW, Tumut NSW, Wodonga VIC, Whitsunday QLD, Mount Gambier SA, Port Lincoln SA, Bunbury WA, Roebourne WA, Huon Valley TAS
$400 000 to $500 000 per household	Penrith NSW, Liverpool NSW, Wyong NSW, St Kilda VIC, Coburg VIC, Bribie Island QLD, Newstead QLD, Adelaide SA, Subiaco WA, Ngunnawal ACT	Greater Taree NSW, Shellharbour NSW, Coonabarabran NSW, Geelong VIC, Ararat VIC, Coolangatta QLD, Kangaroo Island SA, Manjimup WA
$500 000 to $600 000 per household	Camden NSW, Bankstown NSW, Williamstown VIC, Indooroopilly QLD, Adelaide Hills: Ranges SA, Melville WA, Narrabundah ACT	Eurobodalla NSW, Byron NSW, Wangaratta South VIC, West Wimmera VIC, Surfers Paradise QLD, Cleve SA, Esperance WA, York WA
$600 000 to $700 000 per household	Hurstville NSW, North Sydney NSW, Waverley East VIC, Cleveland QLD, Walkerville SA, Aranda ACT	Jerilderie NSW, Wingecarribee NSW, Corangamite South VIC, Noosa-Noosaville QLD, Bungil QLD, Dandaragan WA
$700 000 to $800 000 per household	Hornsby NSW, Waverley NSW, Hawthorn VIC, Ascot QLD, Claremont WA, Cambridge WA, Isaacs ACT	Kiama NSW, Queenscliffe VIC, Moyne North West VIC, Broadbeach Waters QLD, Boyup Brook WA
$800 000 to $900 000 per household	Baulkham Hills NSW, Drummoyne NSW, Bayside South VIC, Pullenvale QLD, Mosman Park WA, Yarralumla ACT	Conargo NSW, Bundall QLD, Kojonup WA
More than $900 000 per household	Strathfield NSW, Lane Cove NSW, Mosman NSW, Manningham East VIC, Fig Tree Pocket QLD, Cottesloe WA	Lake Grace WA

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE Household Wealth Database.

Chapter 5 found that average household wealth in rural areas greatly exceeded wealth in other urban centres of between 1000 and 100 000 population. Tables 6.4 and 6.5 highlight a number of rural SLAs which have particularly high wealth. Rural SLAs[35] with average household wealth of more than $600 000 include Lake Grace, Gnowangerup and Boyup Brook in WA; Conargo, Jerilderie and Wagga Wagga Part B in NSW; Moyne North West in Victoria; Bungil in Queensland; and Barunga West

35. Defined as SLAs which do not contain an urban centre of more than 1000 people.

in SA. However, there are just as many rural SLAs with wealth below the national average, as above it. Rural SLAs with average wealth of less than $300 000 include Herberton and Kolan in Queensland and Derwent Valley Part B, Kentish and Central Highlands in Tasmania. While, on average, rural households are wealthier than other households, there is no general tendency for rural SLAs to have particularly high average wealth.

There is, however, a tendency for urban centres with populations of between 1000 and 100 000 to have relatively low average wealth.[36] Table 6.6 explores this further, comparing average household wealth in 20 regional centres with average household wealth in the SLA that completely surrounds them. While they differ in size, these towns and cities tend to function as a service centre for the smaller towns and agricultural areas that surround them.

All of the regional centres in Table 6.6 have average household wealth of less than $400 000, and average wealth is consistently much lower in the regional centres than in the surrounding SLAs. The extent of the gap between the regional centres and their surrounding SLAs differs, being relatively narrow for Geraldton and Greenough Part A ($79 200 gap) and particularly wide for Roma and Bungil SLAs ($385 000 gap).

Table 6.6 Household wealth in selected regional centres and surrounding SLAs, 2003–04

Regional centre SLA	*State*	*Population of regional centre, 2001*	*Household wealth, 2003–04 ($ thousands)*	*Surrounding SLA*	*Household wealth, 2003–04 ($ thousands)*
Wagga Wagga Part A	NSW	44 451	357.6	Wagga Wagga Part B	692.1
Albury	NSW	42 148	350.1	Hume	480.7
Dubbo Part A	NSW	30 937	327.3	Dubbo Part B	481.9
Shoalhaven Part A (Nowra)	NSW	24 765	390.9	Shoalhaven Part B	553.5
Armidale Dumaresq: City	NSW	20 271	323.5	Armidale Dumaresq Balance	531.9
Glen Innes	NSW	5 722	287.0	Severn	502.5
Mildura Part A	VIC	28 062	348.2	Mildura Part B	515.3
Horsham Central	VIC	13 241	332.5	Horsham Balance	588.1
Warrnambool	VIC	11 826	382.5	Moyne South	633.1
South Grampians: Hamilton	VIC	9 128	388.0	South Grampians Balance	644.9
Delatite: Benalla	VIC	8 614	343.9	Delatite: North	524.0
Mackay Part A	QLD	57 649	294.5	Mackay Part B	430.3
Charters Towers	QLD	8 492	241.9	Dalrymple	405.3
Roma	QLD	5 907	261.3	Bungil	646.3
Goondiwindi	QLD	5 491	307.0	Waggamba	498.1
Mount Gambier	SA	22 751	311.9	Grant	521.4
Port Pirie City	SA	13 263	236.6	Port Pirie Balance	414.2
Port Lincoln	SA	12 664	356.5	Lower Eyre Peninsula	523.4
Geraldton	WA	25 436	288.8	Greenough Part A	368.0
Albany Central	WA	22 415	376.4	Albany Balance	511.1

Source: BITRE analysis based on BITRE *Household Wealth Database* and ABS *Census of Population and Housing 2001*.

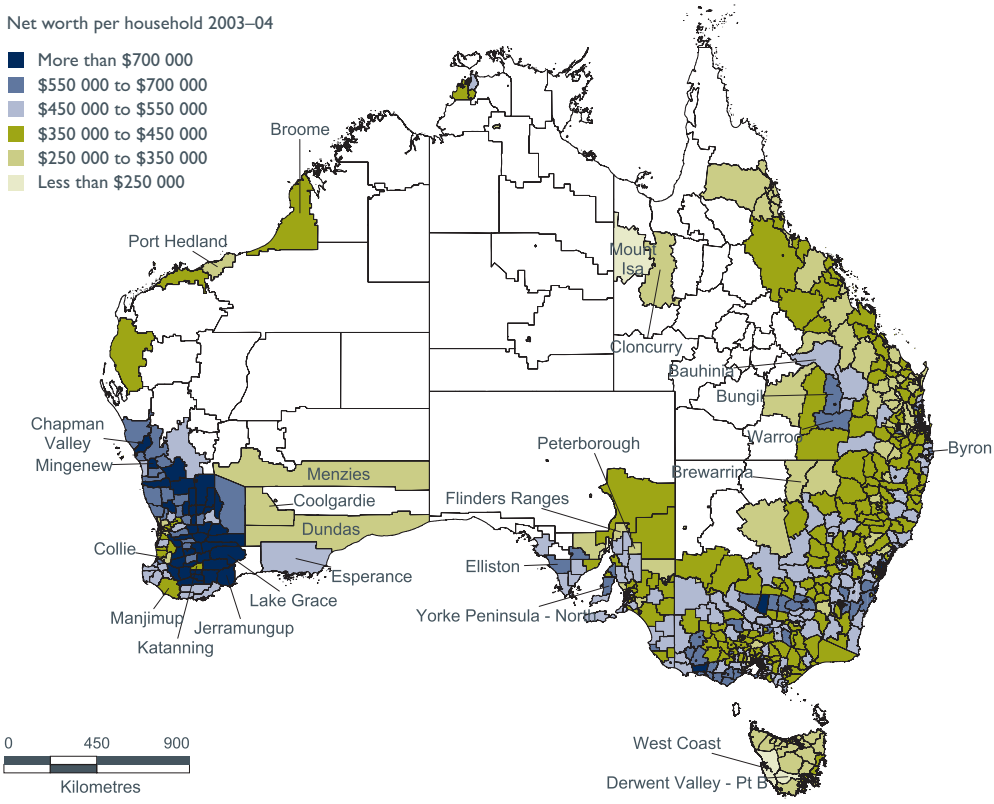
36. Some coastal towns do not follow this overall pattern. For example, Table 6.5 identifies Kiama NSW, Queenscliffe VIC and Esperance WA as having above average wealth.

The lower wealth in the regional centres is partly attributable to lower business assets than the surrounding SLAs. When business assets are excluded from net worth, the size of the gap is much reduced, but all 20 regional centres continue to have lower estimates than their surrounding SLAs.

Figure 6.2 presents average wealth throughout Australia. Table 6.2 highlighted the fact that the wealthiest Australian SLAs were contained within the major capital cities, particularly Sydney, Perth and Melbourne, but the scale means that these SLAs are not visible in Figure 6.2. Rather, the standout feature is the cluster of high wealth SLAs in WA's wheatbelt. Other high wealth clusters are evident in western Victoria and in the NSW Riverina. In each of these regions, farm business assets are a key component of wealth.

Figure 6.2 also reveals that Tasmanian SLAs have generally low wealth per household. Very low wealth is evident in remote WA (e.g. Dundas, Port Hedland), remote NSW (e.g. Brewarrina), and in numerous Queensland SLAs.

Figure 6.2 Average household wealth, Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Very remote SLAs and discrete indigenous communities are out of scope.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

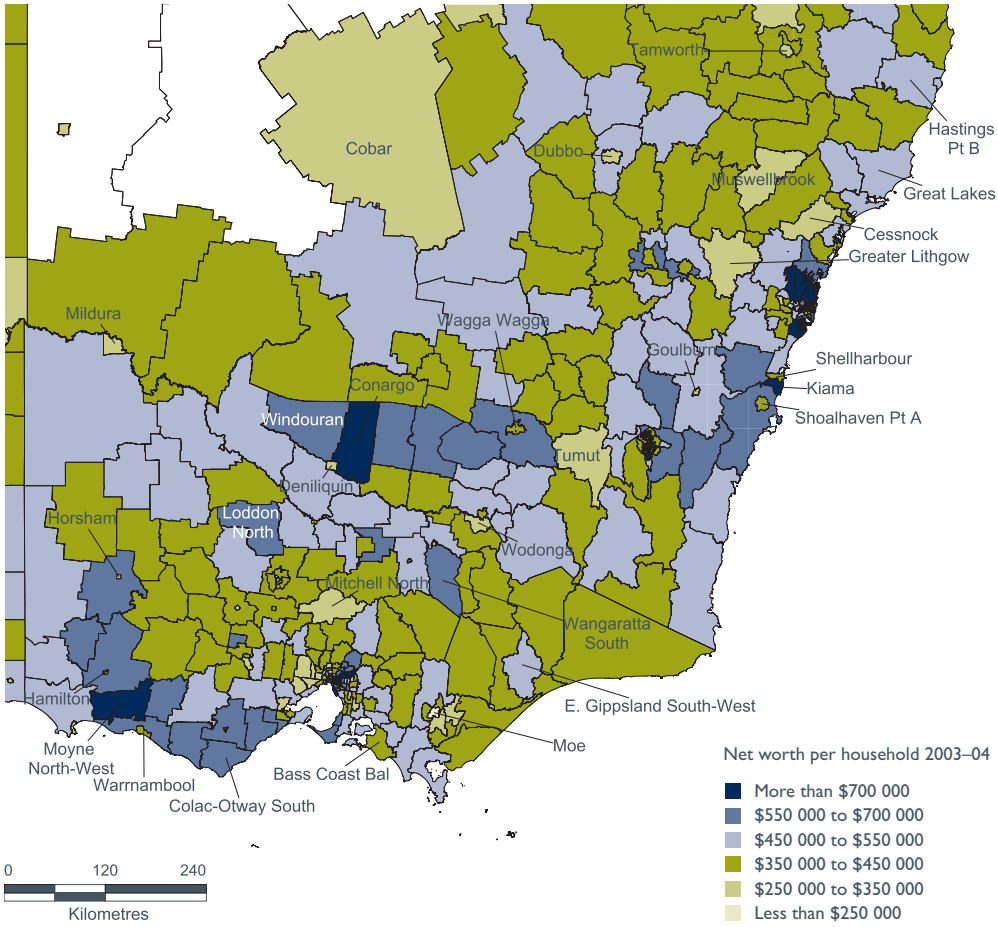
Figure 6.3 focuses in on southern NSW and Victoria. It remains the case that the highest wealth SLAs within Sydney, Melbourne and Canberra are not easy to discern at this scale. However, the map does highlight the following areas as having above average net worth:

- a string of agricultural SLAs in the NSW Riverina, stretching from Windouran to Wagga Wagga Part B
- a string of SLAs along Victoria's west coast, stretching from the Surf Coast through to Moyne South
- an adjoining group of agricultural SLAs in Victoria's inland south west, including Moyne North West, Horsham Balance and Wannon
- a group of SLAs to the south of Sydney and Wollongong, including Kiama, Shoalhaven Part B and Wingecarribee
- several SLAs around Canberra, including Gunning, Tallaganda and Yarrowlumla Part A.

The generally lower wealth in regional centres than in the surrounding rural SLAs, which was pointed out in Table 6.6, is also a key feature of Figure 6.3. Regional towns such as Mildura, Deniliquin, Dubbo, Wagga Wagga, Albury-Wodonga, Horsham, Hamilton, Tamworth and Warrnambool, all have lower average wealth than the SLAs which surround them.

Clusters of low-wealth SLAs can be seen in Melbourne's outer western suburbs and in Victoria's Latrobe Valley. However, low wealth SLAs are quite geographically dispersed throughout south east Australia. Examples of SLAs with average wealth of $350 000 or less include Greater Lithgow, Cessnock, Muswellbrook, Cobar and Tumut in NSW, and Mitchell North, Benalla, Traralgon and Swan Hill in Victoria.

Figure 6.3 Average household wealth, south east Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Very remote SLAs and discrete indigenous communities are out of scope.

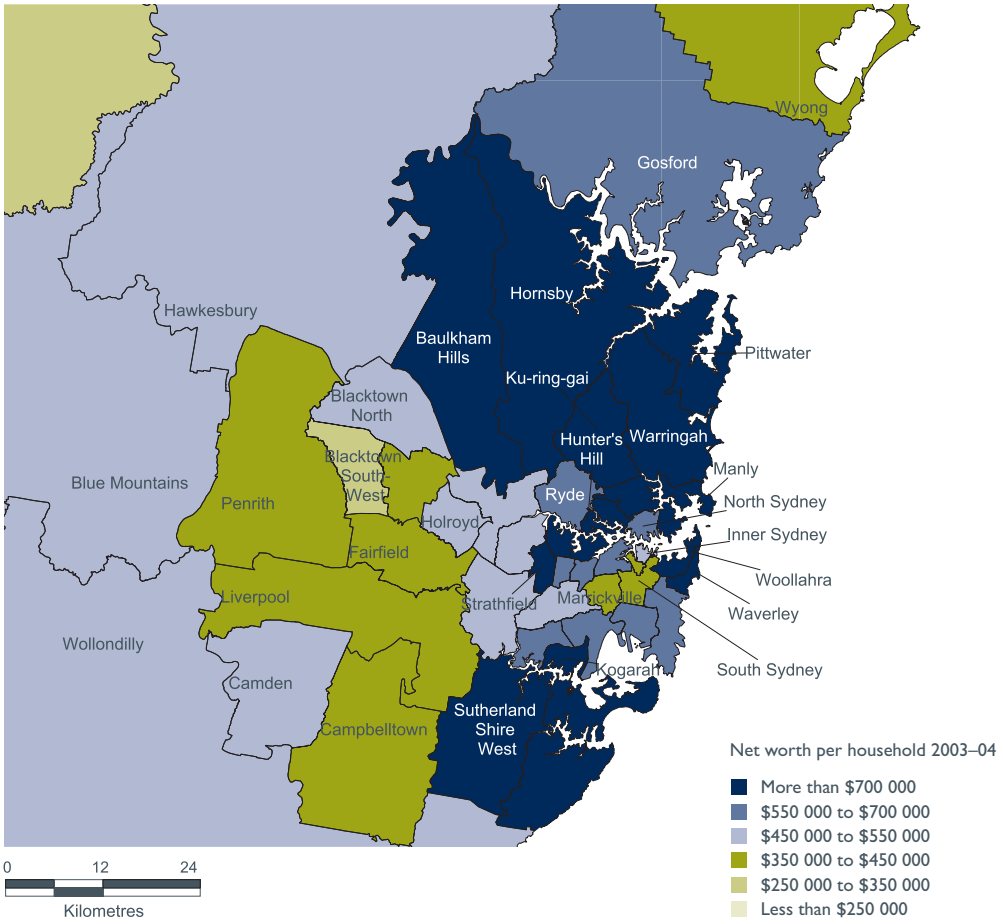
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 6.4 illustrates variation in average household wealth within Sydney. A large number of Sydney SLAs fit into the highest average wealth category, with net worth of more than $700 000 per household. Such extremely high wealth SLAs are evident throughout Sydney's north. Other parts of Sydney with extremely high average net worth include:

- the eastern suburbs SLAs of Woollahra and Waverley
- Kogarah and Sutherland Shire in Sydney's south
- a cluster of SLAs to the west of the city, including Strathfield, Concord, and Drummoyne.

Blacktown South West is the Sydney SLA with the lowest average wealth. This SLA is part of a larger group of SLAs in the outer western suburbs which have average net worth below the national average of $467 600. The group consists of Penrith, Liverpool, Fairfield, Campbelltown, Holroyd and Blacktown South East. Only five other Sydney SLAs fall below the national average, namely Auburn, Marrickville, South Sydney, Sydney Remainder and Wyong on the Central Coast.

Figure 6.4 Average household wealth, Sydney, 2003–04



Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 6.5 is focused on Melbourne and Geelong. In comparison to Sydney, there are a far smaller number of Melbourne SLAs with average net worth of more than $700 000, and these SLAs fit into two groups:

- the southern SLAs of Brighton and Bayside South
- a string of SLAs in the east stretching from Prahran to Manningham East, and including Hawthorn, Kew and Camberwell.

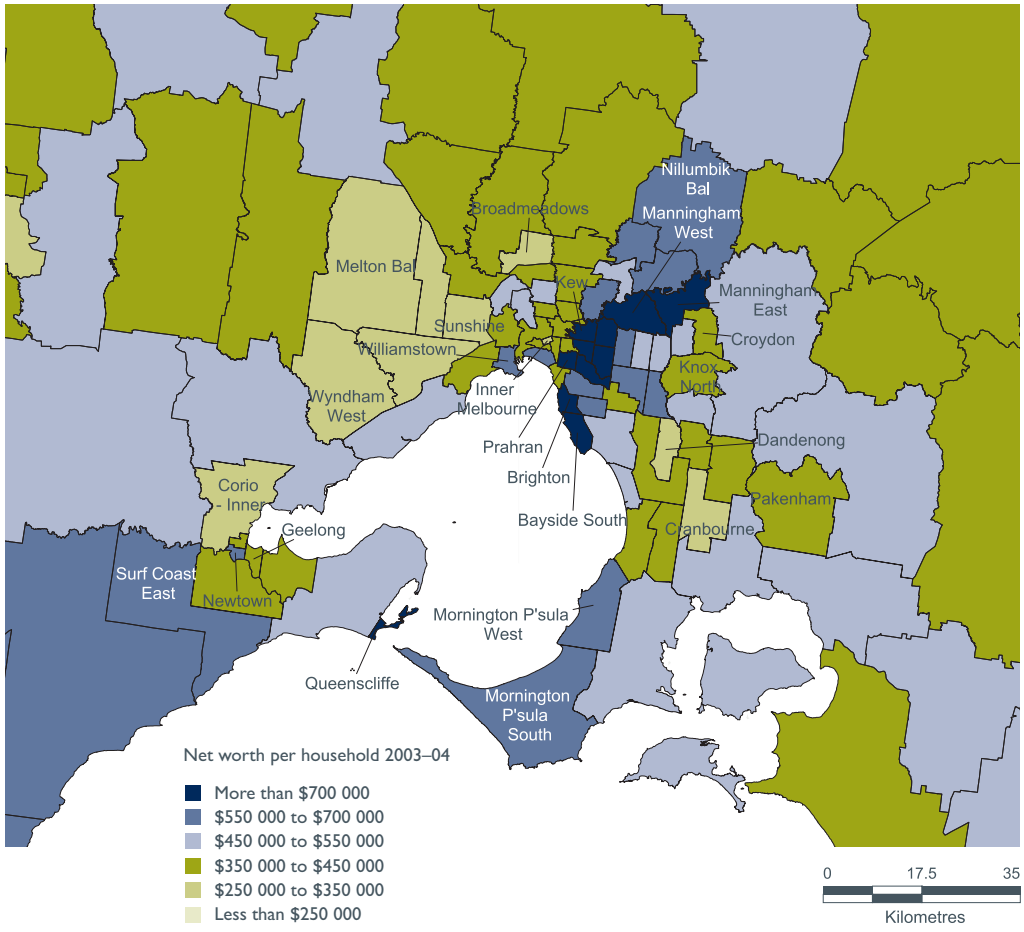
The Queenscliffe SLA, to the east of Geelong, also has average net worth of more than $700 000.

More generally, Melbourne's eastern suburbs tend to have much higher wealth than the western suburbs. In the east, only Cranbourne and Dandenong have particularly low wealth. To the west of the city centre, only Williamstown stands out as having relatively high wealth, while numerous SLAs have average wealth of less than $350 000, including Sunshine, Broadmeadows, Melton East and Wyndham West.

Turning to the nearby city of Geelong, net worth per household is below the national average in all SLAs apart from Newtown. Inner Corio has particularly low net worth. A notable feature is that the surrounding rural and coastal SLAs have higher net worth than the city itself. This is consistent with the pattern observed for smaller regional cities, such as Albury-Wodonga, Tamworth and Warrnambool.

Considering the Sydney and Melbourne maps together, there is a tendency for the lowest wealth SLAs to be located in the outer suburbs, while the inner city areas of both cities have low to middling wealth. In both cities, the highest wealth SLAs are established middle ring suburbs. Not all outer suburbs have low wealth, however, with Nilumbuk shire in Melbourne's north east being a clear exception.

Figure 6.5 Average household wealth, Melbourne and Geelong, 2003–04



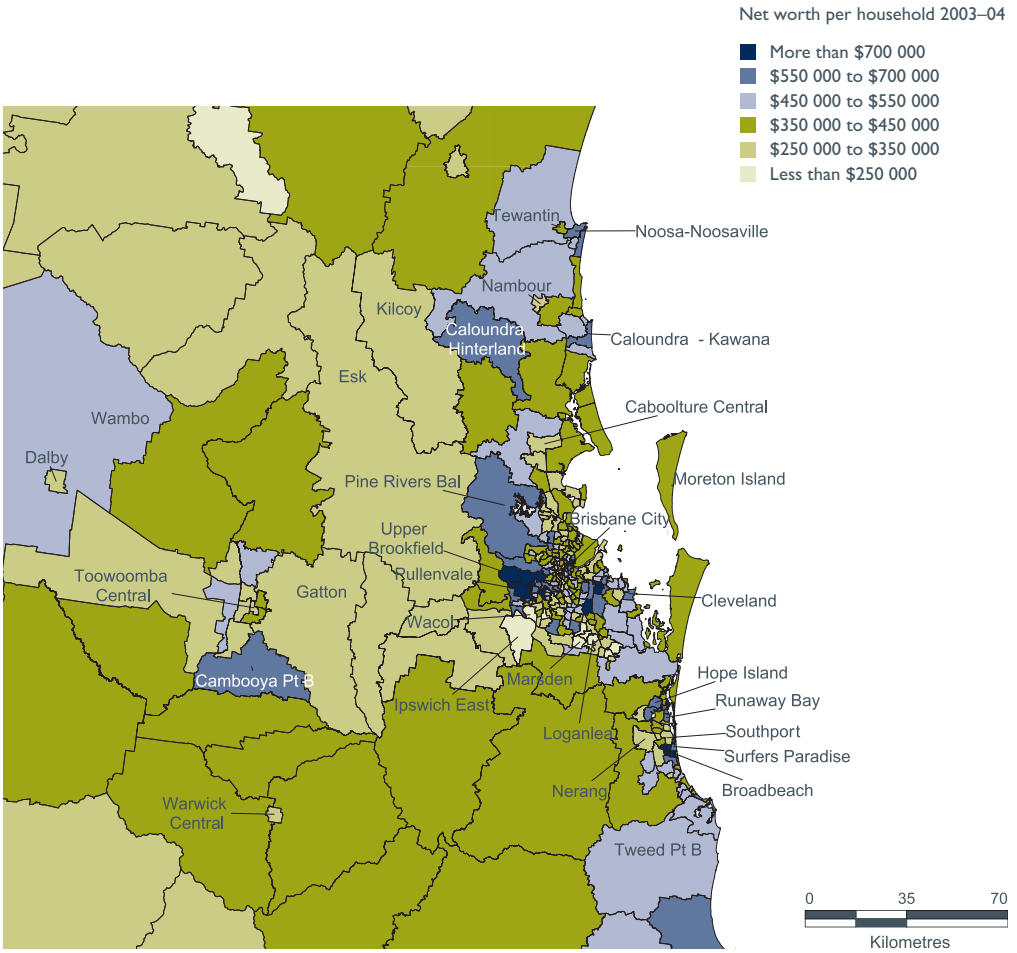
Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 6.6 presents household wealth estimates for south-east Queensland. Each of the three major conurbations of Brisbane, the Gold Coast and the Sunshine Coast contain both low wealth and high wealth areas.

On the Sunshine Coast, wealth is highest in Noosa-Noosaville, Sunshine-Peregian, Kawana and the Caloundra Hinterland, but is much lower in Nambour. On the Gold Coast, average wealth exceeds $650 000 for Main Beach-Broadwater and the canal suburbs of Benowa, Bundall, Runaway Bay, Hollywell and Broadbeach Waters. In contrast, average wealth is below $350 000 in the Nerang, Oxenford, Southport and Stephens SLAs.

For Brisbane, some of the highest wealth SLAs are Ascot, Hamilton, Chelmer, Brookfield (Mt Coot-tha), Fig Tree Pocket, Kenmore Hills, Pullenvale and Upper Brookfield. While these areas all have average wealth of more than $700 000 per household, some of the least wealthy SLAs in Australia are located to the south of Brisbane (i.e. Inala, Wacol, Kingston, Woodridge and Marsden).

Figure 6.6 Average household wealth, south east Queensland, 2003–04

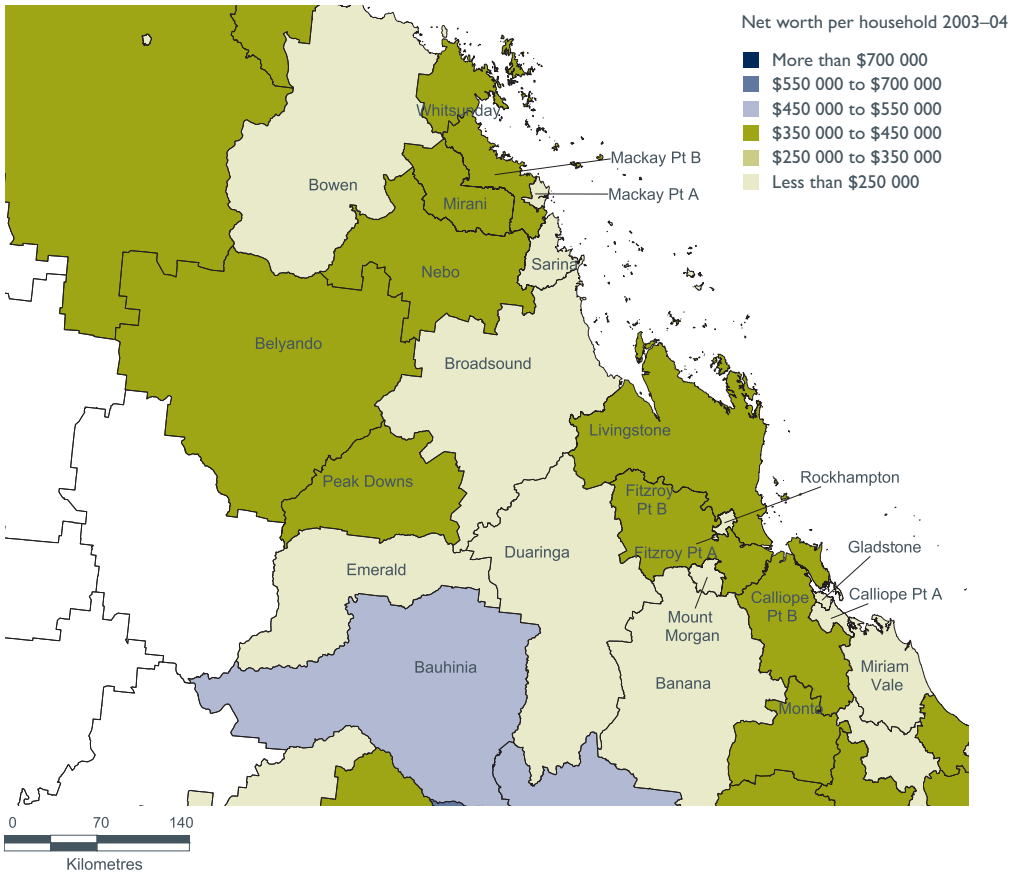


Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 6.7 focuses on central Queensland. In recent years this region has experienced considerable change associated with growth in coal mining in the Bowen Basin and some major industrial developments in Gladstone. However, in 2003–04, every

single SLA in Figure 6.7 had average net worth below the national average. Mount Morgan has the lowest average net worth of all in-scope Australian SLAs with more than 500 households, and Rockhampton does not fare much better. While the central Queensland region contains a diverse array of SLAs, including mining communities, regional service centres, industrial centres and coastal, tourism-oriented SLAs, low average wealth is a common feature of all its SLAs.

Figure 6.7 Average household wealth, central Queensland, 2003–04

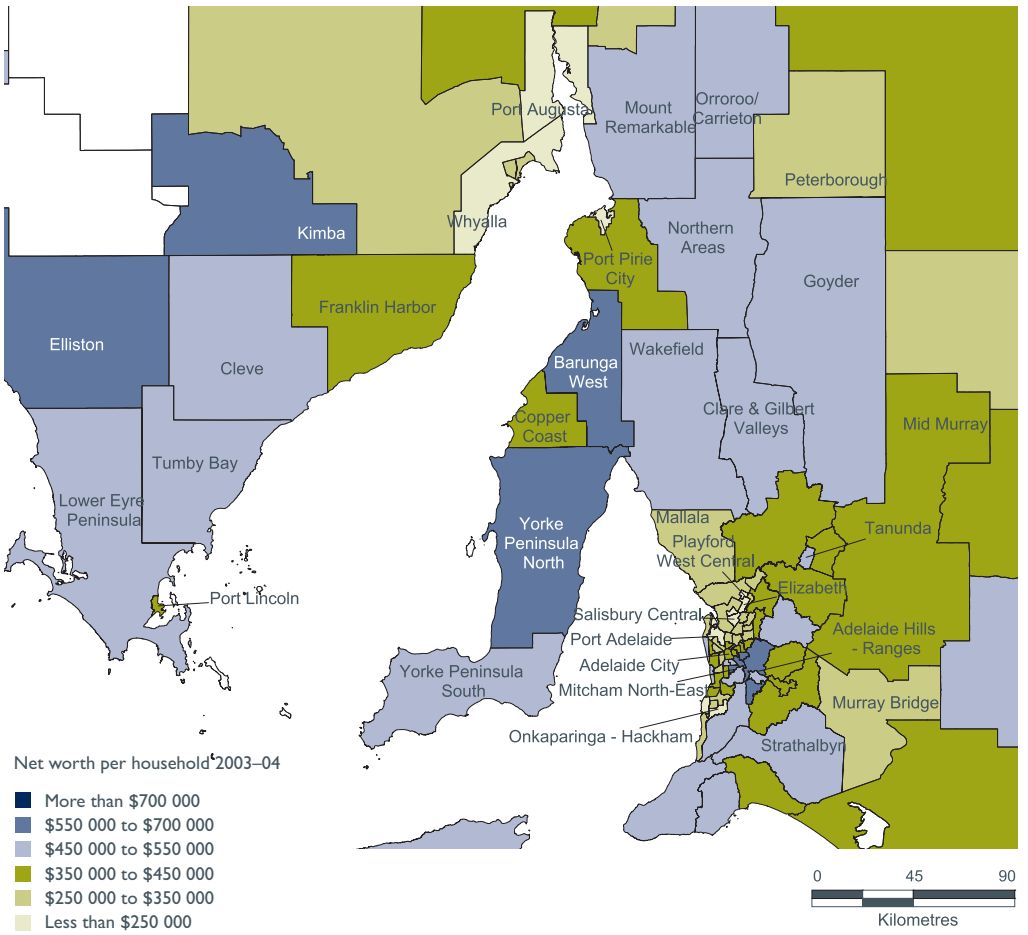


Notes: Based on 2001 ASGC SLA boundaries. Very remote SLAs and discrete indigenous communities are out of scope.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 6.8 presents household wealth estimates for the Eyre and Yorke Peninsulas and the area around Adelaide. The key feature is the relatively high average wealth estimates for many of the agriculturally-based SLAs on the Eyre and Yorke Peninsulas. Some of Adelaide's eastern suburbs also have high average wealth. Table 6.3 identified the Playford-Salisbury region to the north of Adelaide as having particularly low average wealth, and Figure 6.8 shows this is also a feature of the outer southern suburbs (e.g. Onkaparinga: Hackham). Outside of Adelaide, the industrial centres of Whyalla, Port Pirie and Port Augusta all have relatively low average wealth, as does Peterborough.

Figure 6.8 Average household wealth, Adelaide and the Eyre and Yorke Peninsulas, 2003–04



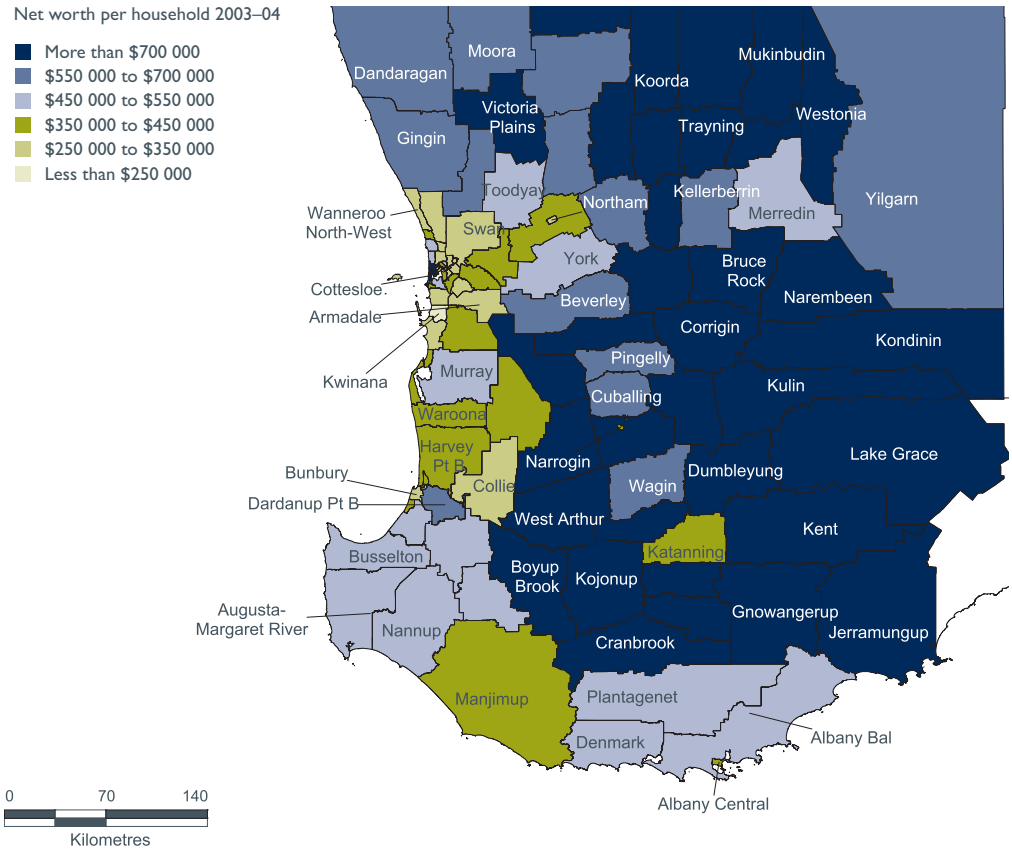
Notes: Based on 2001 ASGC SLA boundaries. Very remote SLAs and discrete indigenous communities are out of scope.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 6.9 presents household wealth estimates for the south western part of WA. The inland SLAs which form WA's wheatbelt tend to have very high average wealth and a small population base. Only Lake Grace SLA featured in the list of the top 20 SLAs with more than 500 households (Table 6.2), but Figure 6.9 reveals that many of the nearby SLAs have similar levels of wealth. The high wealth in these inland SLAs is due to a very high proportion of households owning a business, most commonly a farm business. The larger inland towns such as Katanning, Northam, Narrogin and Merredin have lower wealth than their rural surrounds.

Figure 6.9 also reveals that low wealth SLAs are concentrated on the northern and southern outskirts of Perth (e.g. Kwinana, Armadale, Wanneroo North West, Swan). The towns of Collie and Bunbury both have relatively low average wealth, but there are several coastal SLAs in which average wealth exceeds $500 000 per household, including Augusta-Margaret River, Busselton, Nannup and Denmark.

Figure 6.9 Average household wealth, south-west Western Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Very remote SLAs and discrete indigenous communities are out of scope.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Summary

This chapter has presented BITRE's small area estimates of net worth per household for 2003–04, for the first time revealing the spatial dimensions of this important component of economic wellbeing. The wealthiest and least wealthy SLAs have been identified, and the discussion noted a range of regional characteristics that lie behind the observed disparities in wealth. Property values, business ownership, public housing estates, structural change and the age structure of the local population are just some of the factors which underly these spatial differences.

Capital cities dominate the list of the wealthiest regions, with Sydney suburbs featuring particularly prominently. Wealth in these regions is, to a large extent, attributable to high property values. The capital cities also contain some of the least wealthy areas. These tend to be located in the outer suburbs or outlying commuter settlements. These low wealth outer suburban SLAs typically have relatively youthful populations and below average property values. Several inner suburban locations also have low average wealth, due to low home ownership rates and youthful populations.

Outside of the capital cities, the highest wealth SLAs were heavily reliant on agriculture. The high average wealth for these SLAs is largely attributable to substantial net business assets from owner-operated farms. Gold Coast canal suburbs and some coastal SLAs (e.g. Kiama, Queenscliffe, Surf Coast West) also perform strongly in terms of wealth, due to high property values and high rates of home ownership.

Mid-sized regional centres, particularly those which have a declining heavy industry base, feature prominently amongst the least wealthy SLAs. Structural change, high unemployment and low property values are common features of the least wealthy SLAs outside of the capital cities. Regional service centres tend to have lower net worth than their surrounding rural areas, even when business assets are removed from the equation.

While this chapter reveals considerable spatial variation in wealth, the distribution of wealth across SLAs is much more equal than the distribution of wealth across households. Nevertheless, some wealth components, such as net business assets and share and trust assets, vary a great deal across regions. The following chapter examines spatial differences in the composition of the household wealth portfolio.

Key messages

Average household wealth varies a great deal across Australia's regions, ranging from a low of $154 300 for Mount Morgan shire in Queensland, to a high of $1.93 million for Peppermint Grove in Perth.

Sixty five per cent of the regional wealth estimates lie below the national average of $467 600 per household.

Net business assets and share and trust assets are unequally distributed across regions, while dwelling contents and vehicle assets are quite evenly distributed across regions.

Capital cities dominate the list of the wealthiest regions in Australia, with seven of the ten areas in which average wealth tops $1 million being located within Sydney.

The capital cities also contain some of the least wealthy areas, with nine of the ten least wealthy areas being outer suburbs of Adelaide, Brisbane or Darwin.

Outside of the capital cities, the most wealthy regions were heavily reliant on agriculture. Clusters of high wealth SLAs are located in WA's wheatbelt, SA's Eyre and Yorke Peninsulas, western Victoria and the NSW Riverina.

Gold Coast canal suburbs and selected coastal areas also perform strongly in terms of average household wealth.

Mid-sized regional centres, particularly those which have a declining industry base, feature prominently amongst the least wealthy areas.

Regional service centres tend to have lower net worth than their rural surrounds, even when business assets are removed from the equation.

Net worth per household is consistently low throughout regional Tasmania.

Mining communities tend to have relatively low wealth per household.

Chapter 7 Regional composition of household wealth

Introduction

This chapter analyses the composition of household wealth at a small area scale for 2003–04.[37] It begins with an overview of the relationship between household wealth and its components. This is followed by a discussion of the main differences in the composition of the wealth portfolio across Australia's regions, before the level of indebtedness and selected wealth components are investigated in more detail.

Relationship between wealth and its components

Net worth is equal to household assets minus household liabilities. Therefore, variation in average net worth across SLAs can, in a very direct sense, be attributed to variation in the different asset and liability components.

Table 7.1 presents the correlation coefficients between average net worth and each of its components.

Table 7.1 Correlations between average household wealth and wealth components, SLAs, 2003–04

Wealth component	*Correlation coefficient*
Shares and trusts	0.72
Owner-occupied property assets	0.66
Interest earning assets	0.65
Vehicle assets	0.62
Other property assets	0.51
Net business assets	0.46
Superannuation	0.39
Vehicle loans	0.36
Dwelling contents	0.31
Other property debts	0.30
Owner-occupied property debts	0.16
Study loan debt	0.04
Other assets	0.00
Credit card debt	–0.09
Investment and other loans	–0.10

Note: Based on 1262 in-scope SLAs. Excludes very remote SLAs and discrete indigenous communities.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

37. Detailed estimates are available from BITRE's *Household Wealth Database*, which can be accessed via <www.bitre.gov.au>. This chapter focuses on the 1135 in-scope SLAs which contain 500 or more households, although the maps in this chapter represent all SLAs, regardless of size.

All of the major asset categories, as well as property loans and vehicle loans, are positively correlated with net worth across SLAs, but net worth is most closely linked to share and trust assets and owner-occupied property assets. Some of the smaller wealth components (e.g. study loan debt, other assets) are not related to net worth at the SLA scale.

The close link between owner-occupied property assets and net worth is not surprising given it is by far the largest component. However, share and trust assets are relatively insubstantial, contributing only 6 per cent of net worth. The high correlation arises not from the direct contribution that shares and trusts make to the total, but rather because those SLAs which have high average wealth tend to hold a greater amount of share and trust assets than low wealth SLAs.

Composition of household wealth

Figure 7.1 summarises the composition of wealth for the 10 wealthiest SLAs. The net value of owner-occupied property assets exceeds $500 000 for all of the top 10 regions, and contributes more than 50 per cent of net worth. It is the major driver of differences in net worth across these 10 SLAs. Other property assets, superannuation, business assets and dwelling contents are above average for all of the top 10 regions, but there is little variation in their proportional contribution. However, net other assets do vary considerably across the 10 wealthiest SLAs, from $135 300 in Manly to $349 700 in Woollahra. This result is largely due to the difference in shares and trust assets across these SLAs.

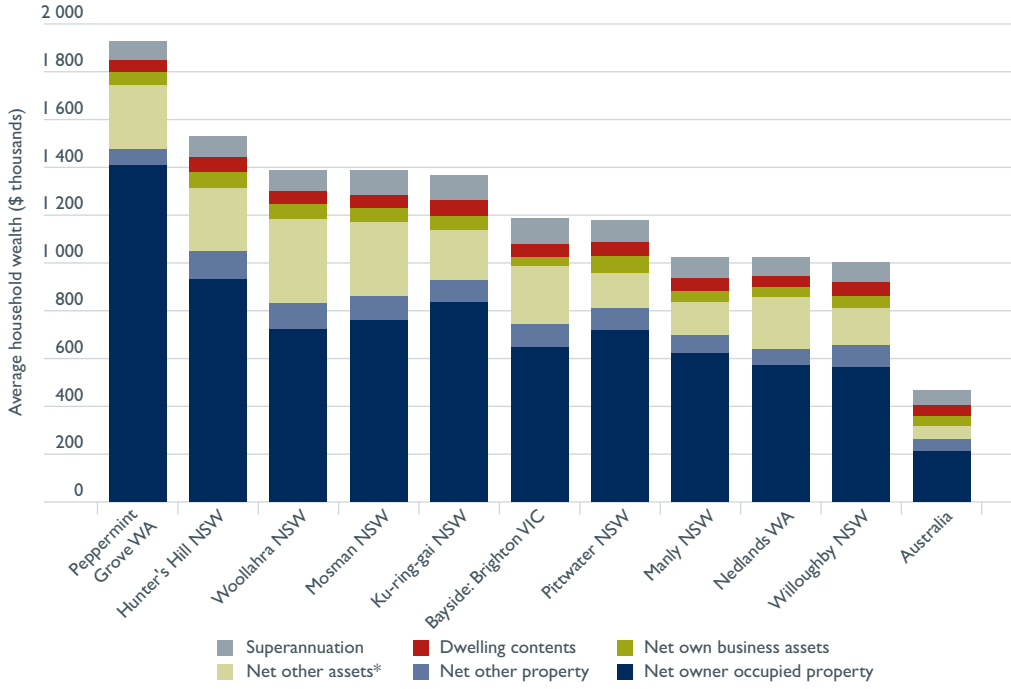
Figure 7.2 summarises the composition of wealth for the 10 least wealthy SLAs in Australia. The net value of owner-occupied property assets is less than $75 000 for all 10 SLAs. The proportion of net worth attributable to net owner-occupied property assets ranges from just 12 per cent in the mortgage-heavy Palmerston Balance SLA near Darwin to 37 per cent in Marsden, in the Logan LGA to Brisbane's south.

The role of other property assets is highly variable across the 10 SLAs, accounting for just 2 per cent of net worth in Marsden, compared to much higher proportions in Wacol (18 per cent), Palmerston Balance (16 per cent) and Moulden (16 per cent). However, all 10 SLAs have net other property assets of less than $35 000 per household, compared to the national average of $50 900.

Dwelling contents and superannuation assets account for a relatively large share of net worth in the 10 least wealthy SLAs. Even the least wealthy SLAs are estimated to have average dwelling contents and average superannuation assets of $25 000 or more. Business assets are relatively unimportant in all but the Palmerston Balance and Moulden SLAs.

The previous two charts indicate that the composition of the wealth portfolio differs considerably between the most wealthy and least wealthy regions. Figure 7.3 illustrates the composition of household wealth by decile. The 1264 in-scope SLAs were ranked according to average net worth and then grouped into 10 deciles, before the wealth composition was calculated for each decile.

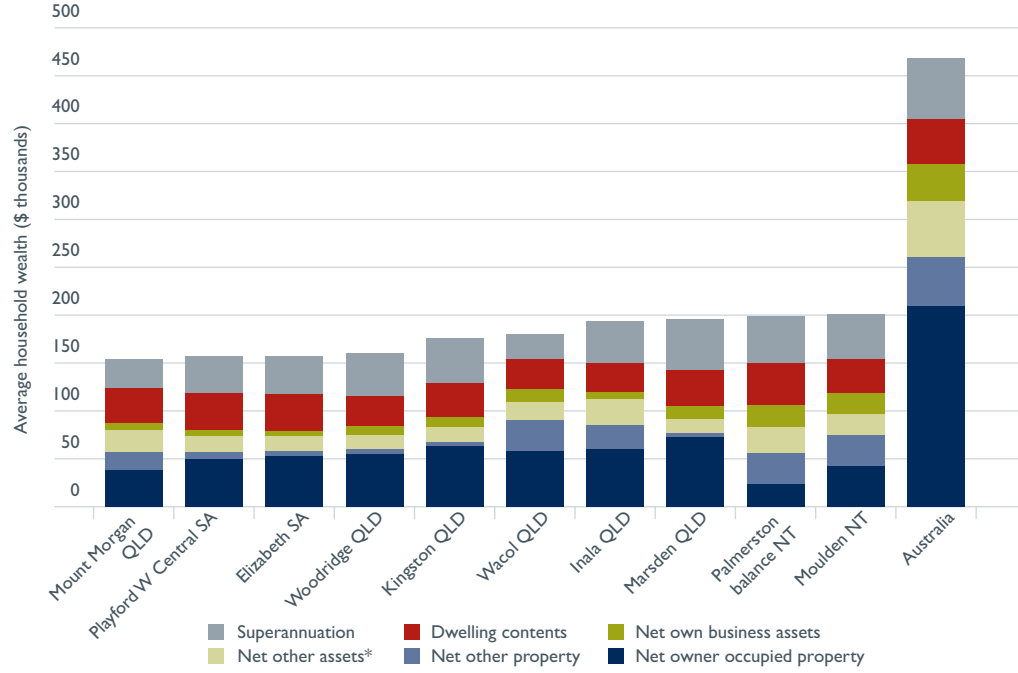
Figure 7.1 Composition of household wealth, 10 wealthiest SLAs, 2003–04



Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.2 Composition of household wealth, 10 least wealthy SLAs, 2003–04

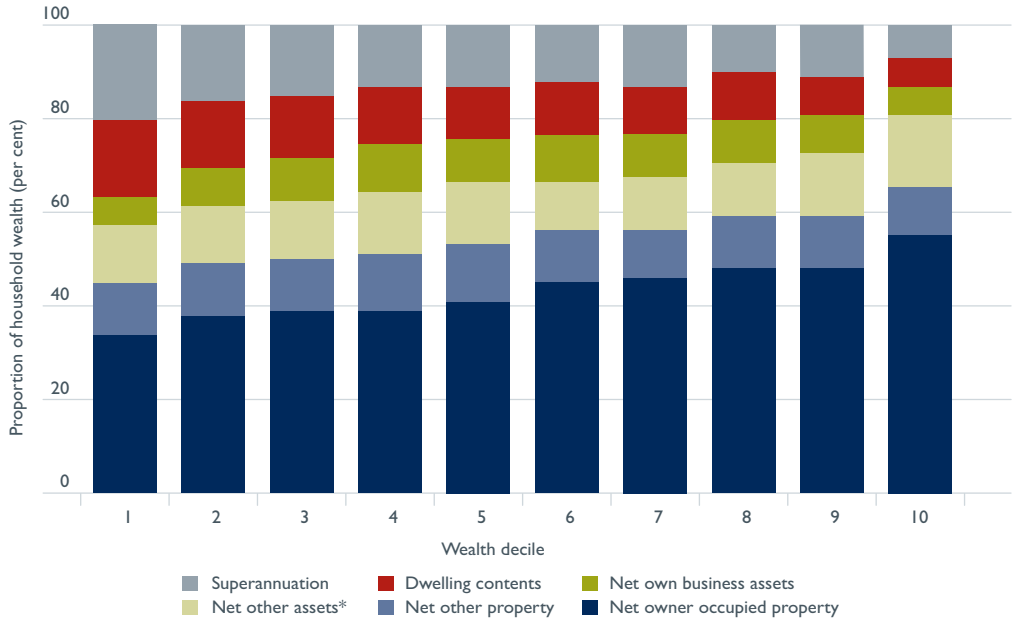


Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

The key feature of Figure 7.3 is that the proportion of wealth attributable to owner-occupied property assets rises strongly across the wealth deciles. Other property assets are fairly stable across the deciles. In contrast, the proportion of wealth attributable to dwelling contents and superannuation declines, although the average holdings of these assets do rise slowly as wealth rises. Business assets are less important to the two extreme deciles (one and ten) than to the middle deciles. The net value of other assets, which includes shares and trusts, is stable across the lower and middle deciles, but is of greater importance for the two most wealthy deciles.

Figure 7.3 Composition of household wealth by decile, 2003–04



Notes: Decile one contains the least wealthy SLAs, while decile ten contains the wealthiest SLAs. Based on 1262 in-scope SLAs. Excludes very remote SLAs and discrete indigenous communities.
*Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

While the least wealthy 10 per cent of SLAs own 5 per cent of net worth, the wealthiest 10 per cent of SLAs own 23 per cent of household net worth. The assets which are most concentrated within the wealthiest 10 per cent of SLAs are shares and trusts (34 per cent) and owner-occupied property assets (26 per cent).

For the majority of regions the composition of the wealth portfolio is broadly similar to the national household wealth portfolio, with owner-occupied property assets as the single most important asset in 82 per cent of the in-scope SLAs with more than 500 households. The SLA for which the composition is most similar to Australia's is Greater Geelong Part B. The SLAs for which the composition is most different to Australia's are Lake Grace and Kojonup in WA, Conargo in NSW, Loddon North in Victoria and Bungil and Taroom in Queensland. The common feature of these SLAs is that business assets, rather than owner-occupied property, is the dominant form of asset, accounting for more than 55 per cent of net worth in all of these SLAs.

Table 7.2 shows that owner-occupied property assets are the single largest component of wealth for the great majority of regions.

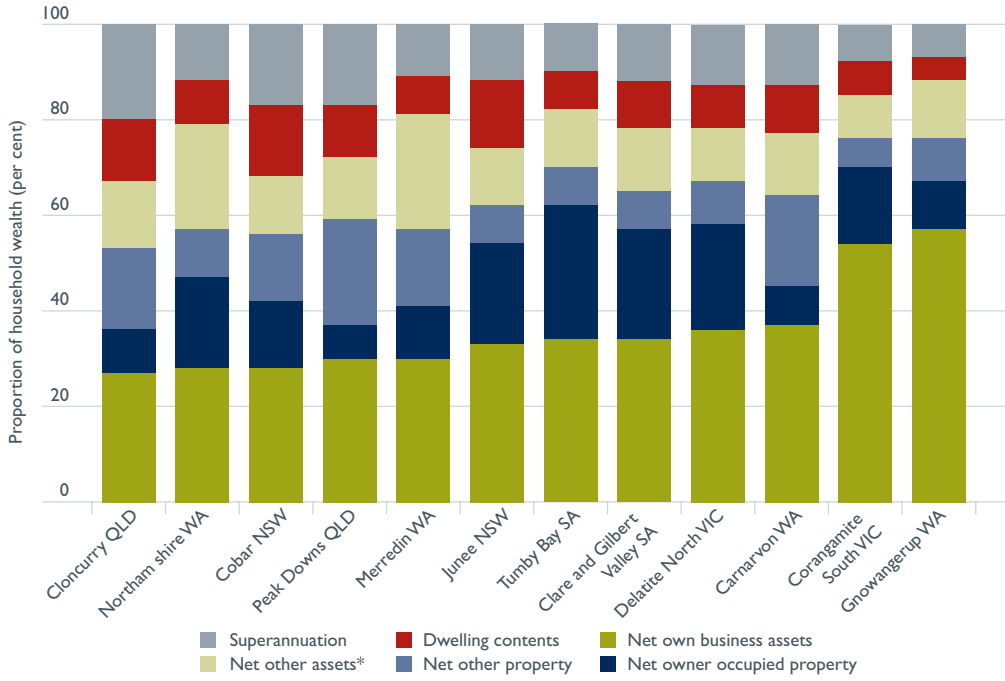
Table 7.2 Most important asset category in SLAs, 2003–04

Most important asset	*Number of SLAs*	*Examples*
Owner-occupied property	930	Strathfield NSW, Bellingen NSW, Phillip Island VIC, Cairns City QLD, Goondiwindi QLD, Robe SA, East Fremantle WA, Kalgoorlie-Boulder Part A, Break O'Day TAS, Yarralumla ACT
Net business assets	183	Forbes NSW, Narrabri NSW, Snowy Mountains NSW, Ararat VIC, Cloncurry QLD, Banana QLD, The Coorong SA, Carnarvon WA, Esperance WA
Other property	18	Mount Isa QLD, Fortitude Valley Remainder QLD, Roxby Downs SA, Broome WA, Port Hedland WA, Perth Remainder WA, Katherine NT, Kingston ACT
Superannuation	3	Rosslea QLD, Vincent QLD, Belconnen Town Centre ACT
Shares and trusts	1	Inner Melbourne VIC

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Net business assets are the major asset category for 16 per cent of SLAs. Most of the regions for which business assets are the single largest contributor have a substantial agricultural sector. Figure 7.4 illustrates the composition of wealth for a dozen of these SLAs. Corangamite South (VIC) and Gnowangerup (WA) both have more than half of net worth held in the form of business assets, but the proportion is lower for the remaining SLAs.

Figure 7.4 Composition of household wealth for selected regions with business assets as the most important asset category, 2003–04



Notes: *Other assets include vehicles, accounts with financial institutions, shares, trusts, and debentures and bonds. Other liabilities include vehicle loans, study loans, investment loans and credit card debts.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

The average value of owner-occupied property assets is well below the national average of $249 000 for all 12 SLAs. While owner-occupied property assets are minimal in Carnarvon, Cloncurry and Peak Downs, these SLAs invest a disproportionately high amount in other property assets. The net other assets category is relatively important for Merredin and Northam shires in WA, and this is largely due to shares and trust assets.

There are 18 SLAs for which other property assets are the single largest category, and these are a mix of mining towns and inner city SLAs.

Two of the three SLAs for which superannuation is the major asset are Townsville suburbs in which estimated superannuation assets are similar to the national average, while estimated owner-occupied housing and other assets are very low. Belconnen Town Centre has above average superannuation assets combined with low owner-occupied housing assets.

Many regions have a wealth portfolio which lacks diversity and is heavily reliant on the owner-occupied dwelling. The owner-occupied dwelling accounts for more than half of all assets in 44 per cent of the in-scope SLAs with more than 500 households. The following SLAs are most heavily reliant on owner-occupied property assets:

- Melton East VIC (80 per cent of assets)
- Peppermint Grove WA (75 per cent)
- Coomera – Cedar Creek QLD (72 per cent)
- Griffin – Mango Hill QLD (71 per cent)
- Sutherland Shire West NSW (70 per cent)
- Amaroo ACT (70 per cent).

These SLAs are quite diverse in terms of average incomes, property values and home ownership rates, but all have a relatively young age profile, with a median age which is less than the national average of 35.

This section has reconfirmed the finding in Chapter 5 that regional differences in the composition of the wealth portfolio are largely attributable to differences in the value of owner-occupied property assets and net business assets.

Indebtedness

The level of household indebtedness is of increasing public concern. RBA (2003) notes that household debt has increased at an average annual rate of 14 per cent over the preceding decade, which exceeds growth in income and assets.

Australia-wide, household debt averages $69 400, but there is considerable variation across regions. Table 7.3 identifies the 10 regions with the highest and lowest average debt per household. The regions with the highest average debt are typically outer suburbs or commuting areas of Australia's capital cities. The 10 SLAs with the lowest average debt are predominantly rural SLAs, and Victoria's Wimmera region is particularly well represented. The low average debt estimates for these SLAs are likely

to be understated because farm debt is not captured in the average liabilities figure, due to the 2003–04 SIH only seeking information on *net* business assets (rather than separate information on business assets and debts).

Housing debt makes up the major part of household debt. Borrowing for owner-occupied housing is the largest part of this, although borrowing for investment purposes and credit card debt are more rapidly growing components (RBA 2003). Nationally, the value of loans outstanding on owner-occupied property accounts for 58 per cent of liabilities. In each of the 10 SLAs with the highest average debt, outstanding loans on owner-occupied property account for more than 65 per cent of total debt. In the 10 SLAs with the lowest average debt, this proportion is consistently lower than the national figure of 58 per cent.

Some of the regions highlighted as having very high average debt in Table 7.3 also have a substantial asset base. For example, the average value of assets per household exceeds $850 000 in Baulkham Hills, Sutherland Shire West and Pullenvale.

Table 7.3 Average household debt, top 10 and bottom 10 SLAs, 2003–04

Highest average debt			*Lowest average debt*		
SLA name	*State or territory*	*Average ($ thousands)*	*SLA name*	*State or territory*	*Average ($ thousands)*
Baulkham Hills	NSW	146.8	Glenelg North	VIC	17.7
Camden	NSW	142.6	Central Highlands	TAS	17.8
Melton East	VIC	140.0	West Coast	TAS	17.9
Palmerston Balance	NT	139.3	Yarriambiack South	VIC	18.2
Pullenvale	QLD	137.0	Hindmarsh	VIC	18.5
Amaroo	ACT	136.1	Yarriambiack North	VIC	18.5
Sutherland Shire West	NSW	131.7	Loddon North	VIC	19.5
Blacktown North	NSW	131.0	Mildura Part B	VIC	19.8
Nicholls	ACT	129.4	Buloke North	VIC	20.4
Knox South	VIC	128.3	Urana	NSW	20.5

Notes: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities. Excludes debts of own incorporated and unincorporated businesses.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

The debt-to-asset ratio shows the proportion of a region's assets that are financed through debt, and therefore provides an indication of the extent to which households in a region are highly leveraged. Nationally, the debt-to-asset ratio was 13 per cent in 2003–04, and RBA (2003) concludes that this is not particularly high by international standards.

Table 7.4 shows the regions which have the highest debt-to-asset ratios. Many Darwin SLA's feature in the top 20, including seven SLA's located within the Palmerston LGA.[38] Three SLAs from Townsville-Thuringowa also feature, including the Douglas SLA which incorporates the main campus of James Cook University. While most of the SLAs are located in the outer suburbs or commuter zones of metropolitan centres, two remote SLAs have high debt-to-asset ratios, namely Roxby Downs and Alice Springs–Larapinta.

38. Bakewell, Durack, Woodroffe, Moulden, Gray, Driver and Palmerston Balance.

Table 7.4 Debt-to-asset ratio, top 20 SLAs, 2003–04

SLA name	*State or territory*	*Debt-to-asset ratio (per cent)*	*Debt-to-asset ratio for owner-occupied property (per cent)*	*Median age, 2001*
Palmerston Balance	NT	41.3	81.8	28
Bakewell	NT	36.3	61.9	26
Durack	NT	32.0	59.6	28
Woodroffe	NT	30.8	57.6	28
Melton East	VIC	30.4	39.9	28
Moulden	NT	28.5	54.2	25
Gray	NT	27.7	48.2	28
Kelso	QLD	26.6	48.9	28
Thuringowa Part A balance	QLD	25.6	46.5	29
Alice Springs: Larapinta	NT	24.6	42.6	30
Driver	NT	24.6	45.8	27
Karama	NT	24.4	41.2	29
Wanneroo North West	WA	23.9	31.4	30
Malak	NT	23.9	38.6	29
Amaroo	ACT	23.8	34.5	29
Blacktown South West	NSW	23.7	28.8	29
Roxby Downs	SA	23.6	49.0	29
Griffin-Mango Hill	QLD	24.3	30.2	30
Douglas (Townsville)	QLD	23.5	39.9	21
Doolandella-Forest Lake	QLD	23.5	36.4	29

Notes: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Excludes debts of own incorporated and unincorporated businesses.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

The Palmerston Balance SLA has a much higher debt-to-asset ratio than any other region and the debt-to-asset ratio for owner-occupied property is 82 per cent. The small area estimates suggest this is because the great majority of home owner households in this SLA are recent purchasers with a mortgage, and as of 2003–04, only a small proportion of that mortgage had typically been repaid. According to APM, the average house price fell by 11 per cent in the year ended June 2004.

All of the SLAs with high debt-to-asset ratios have a very youthful age profile, with a median age of 30 or less, in comparison to the national median of 35. As we saw in Chapter 4, the debt-to-asset ratio peaks for 15 to 24 year olds and declines with age.

The value of loans outstanding on owner-occupied property is the most important type of liability, accounting for 58 per cent of household liabilities nationally. The proportion is higher than 58 per cent for all of the 20 SLAs in Table 7.4, apart from the mining centre of Roxby Downs. Residents of Roxby Downs have an above average tendency to borrow to finance investment properties and this is a common characteristic of mining towns.

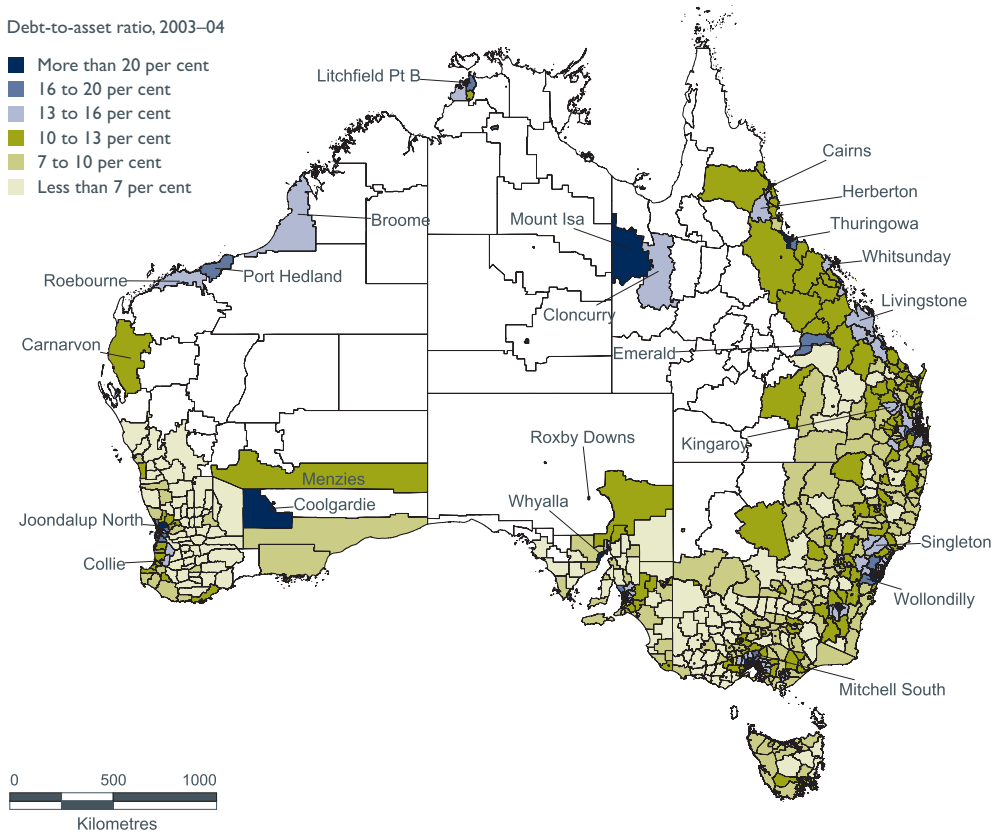
The debt-to-asset ratio for owner-occupied property is just 16 per cent for Australia, yet all of the SLAs in Table 7.4 have a ratio which exceeds 25 per cent. The ratio exceeds

50 per cent for five of the Palmerston SLAs. There are several additional SLAs, which do not feature in Table 7.4, for which the ratio exceeds 50 per cent, namely:

- Mount Isa in Queensland (61 per cent)
- Coolgardie (59 per cent) and Kalgoorlie-Boulder Part A (54 per cent) in WA
- Woodroffe (58 per cent) in the NT
- Gungahlin-Hall Balance (54 per cent) in the ACT.

Figure 7.5 maps the debt-to-asset ratio for Australia. The debt-to-asset ratio is relatively low in most of the SLAs that are visible on the map, as it is the larger cities that contain the SLAs with particularly high ratios. There are a small number of remote SLAs, many of them mining-based, which have high debt-to-asset ratios. Examples include Broome, Port Hedland, Coolgardie, Katherine, Roxby Downs, Emerald and Mount Isa. There are relatively few SLAs in regional Queensland which have debt-to-asset ratios of less than 7 per cent.

Figure 7.5 Debt-to-asset ratio, Australia, 2003–04



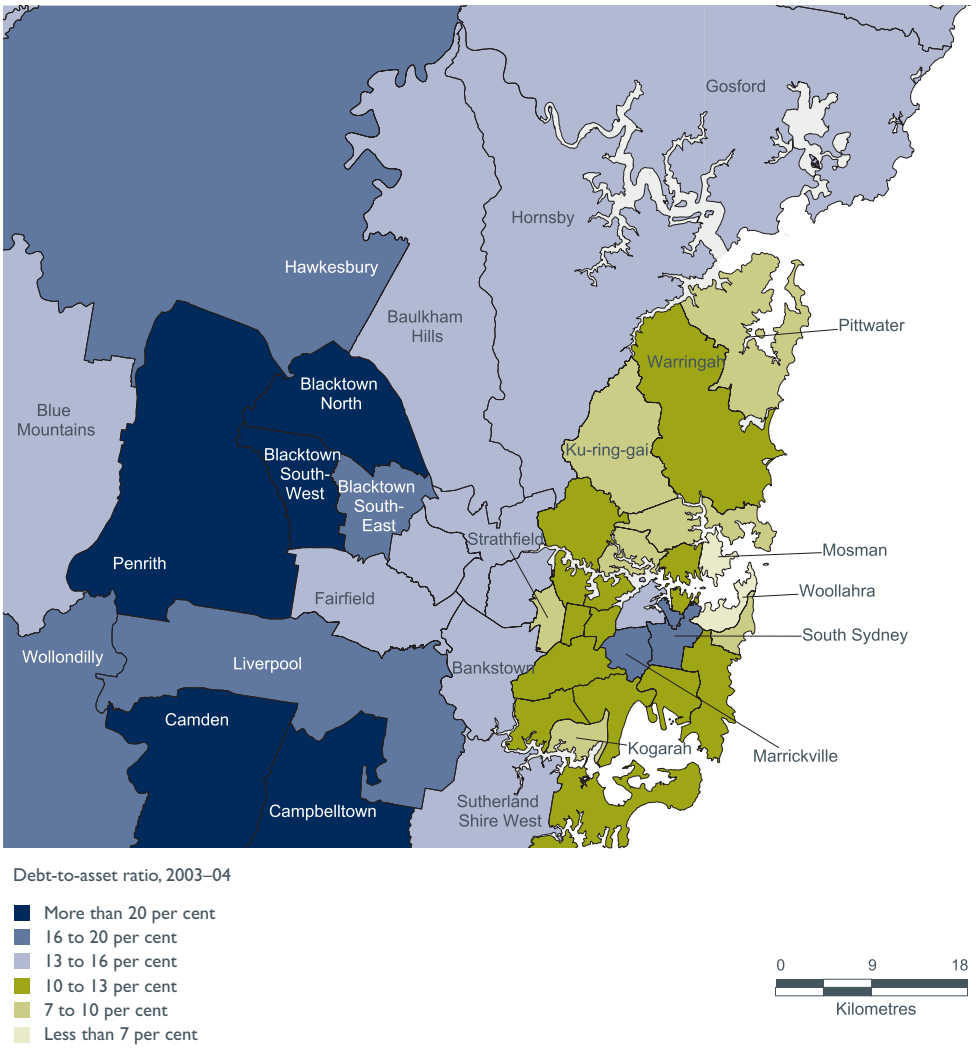
Notes: Business debts are not reflected in the measure of total debt, as the SIH did not collect separate information on business assets and business liabilities.

Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.6 presents the debt-to-asset ratio for Sydney. It is the outer western and south western suburbs which have the highest debt-to-asset ratios. A high proportion of households in these SLAs have an outstanding loan on their owner-occupied dwelling. Woollahra and Mosman have the lowest debt-to-asset ratios, while the northern suburbs generally have a low degree of indebtedness. Strathfield and Kogarah have lower debt-to-asset ratios than their neighbouring SLAs. There is a cluster of SLAs to the immediate south west of the city centre (i.e. South Sydney, Marrickville, Sydney Remainder and Leichhardt) which have higher debt-to-asset ratios than other inner and middle ring Sydney SLAs.

Figure 7.6 Debt-to-asset ratio, Sydney, 2003–04

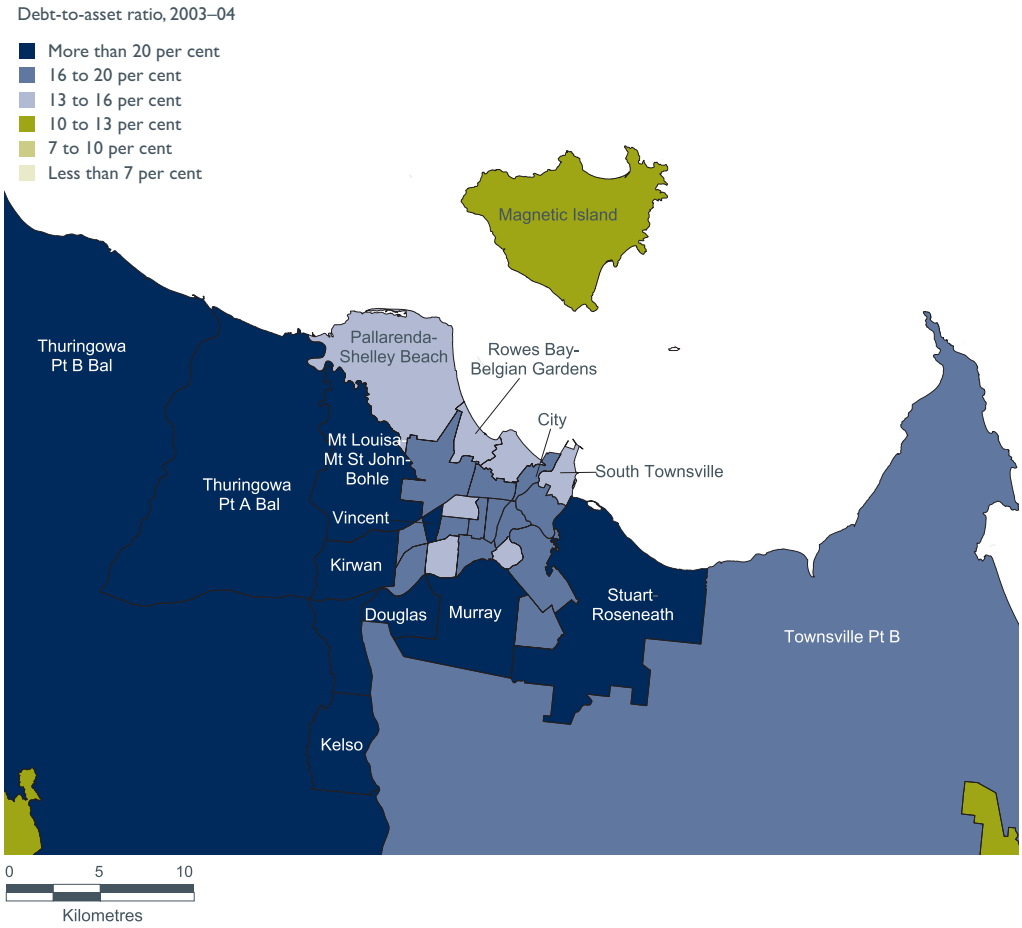


Notes: Business debts are not reflected in the measure of total debt, as the SIH did not collect separate information on business assets and business liabilities.
Based on 2001 ASGC SLA boundaries.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.7 focuses on Townsville-Thuringowa, and the pattern is not dissimilar to that seen in Sydney, with the outer suburbs (particularly those in the Thuringowa LGA) having particularly high debt-to-asset ratios. Unlike Sydney, the Townsville region has consistently high debt-to-asset ratios. There are no SLAs in Townsville-Thuringowa with a ratio of less than 12 per cent.

Figure 7.7 Debt-to-asset ratio, Townsville, 2003–04



Notes: Business debts are not reflected in the measure of total debt, as the SIH did not collect separate information on business assets and business liabilities.
Based on 2001 ASGC SLA boundaries.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Selected wealth components

In this section, some more detailed regional information is presented for the following wealth components:

- net owner-occupied property assets
- net other property assets

- superannuation
- net business assets
- interest earning assets
- net vehicle assets
- shares and trusts
- dwelling contents.

Net owner-occupied property assets

Net owner-occupied property assets account for 45 per cent of household wealth. This section explores regional differences in the net value of owner-occupied property assets, which can be decomposed into the following sources:

- differences in home ownership rates
- differences in average property prices
- differences in the proportion of households who are currently paying off their home
- differences in the average amount of principal outstanding for households with owner-occupied property loans.

The most important source of spatial differences in the net value of owner-occupied property assets is differences in property prices (correlation = 0.91), while differences in average principal outstanding per mortgagee are also important (0.68). Differences in home ownership rates (0.23) and mortgage ownership (0.13) are less influential.

Table 7.5 lists the SLAs with the highest and lowest estimates of net owner-occupied property assets, focusing only on those households with 500 or more households.

The regions with the highest net property assets per household are all located within the major capital cities, with six Sydney SLAs featuring in the top ten. All of the top 10 SLAs in Table 7.5 previously featured in the top 20 for net worth, reinforcing the importance of owner-occupied property assets to household wealth. The average property value is more than double the national average of $355 100 in all of the top 10 SLAs. The average value of principal outstanding on owner-occupied property loans also exceeds the national average of $122 000 in all 10 SLAs, but always represents less than 30 per cent of property values. The home ownership rate and the home loan ownership rate are less systematic for the top 10 SLAs, with some SLAs being above, and others below, the national average.

Table 7.5 Net owner-occupied property assets per household, top 10 and bottom 10 SLAs, 2003–04

SLA	Average net owner-occupied property assets ($ thousands)	Average property value ($ thousands)	Average principal outstanding per home loan ($ thousands)	Home ownership rate (per cent)	Home loan ownership rate (per cent)
Highest net owner-occupied property assets					
Peppermint Grove WA	1 406	1 950	273	75	17
Hunter's Hill NSW	933	1 344	270	75	28
Ku-ring-gai NSW	833	1 037	259	88	32
Mosman NSW	759	1 295	272	63	22
Woollahra NSW	721	1 256	273	61	17
Pittwater NSW	718	1 009	230	80	37
Bayside: Brighton VIC	648	887	214	80	27
Chelmer QLD	634	865	188	80	32
Manly NSW	621	1 079	249	63	25
Lane Cove NSW	576	959	238	67	29
Lowest net owner-occupied property assets					
City Remainder NT	7	303	120	2	0
Coolgardie WA	23	95	78	59	42
Mount Isa QLD	24	115	108	53	34
Palmerston Balance NT	24	178	169	74	64
Peak Downs QLD	25	100	89	35	12
Cloncurry QLD	25	100	100	40	15
Duaringa QLD	27	90	44	39	18
Broadsound QLD	27	92	53	35	9
Fortitude Valley Inner QLD	27	283	152	17	13
Booringa QLD	28	56	56	62	12

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database, 2001 ABS Census of Population and Housing* and APM *house price data.*

The bottom ranked Darwin City Remainder SLA consists largely of defence rental housing, where only a very small proportion of residents own the home in which they live.

Many of the remaining bottom 10 SLAs are mining centres:

- Broadsound, Duaringa and Peak Downs are coal mining centres.
- Cloncurry is a copper mining centre.
- Coolgardie's economy is based around gold and nickel mining.
- Mount Isa's is based on copper, lead, zinc and silver mining.

All of these mining centres have lower than average home ownership and low property values. Mortgages represent a relatively large proportion of property value in these mining centres. For Mount Isa and Cloncurry, the average principal outstanding approximates average property values.

Of the other SLAs in the bottom 10:

- Fortitude Valley is an inner city location with moderate property values, but a very small proportion of residents own the home in which they live.
- Palmerston Balance, near Darwin, has property values well below the national average and the majority of households are home owners with a mortgage. Only 18 per cent of the value of owner-occupied property assets is owned outright.
- Booringa is an agriculturally-based SLA to the west of Roma in Queensland. Property values are extremely low and there are few house sales in any year. Only 12 per cent of households have a mortgage, but for those that do the estimates suggest that average principal outstanding approximates average property values in the shire. This may be due to the average house price declining from $75 900 in 2001–02 to $58 200 in 2003–04, according to APM.

Table 7.6 lists the SLAs in each capital city and state balance which have the highest and lowest average net owner-occupied property assets. The list of SLAs with the highest net owner-occupied property assets is rather similar to the list of the wealthiest SLAs in Table 6.4. The major difference is that agriculturally-based SLAs no longer feature. Instead, within the state balance categories, it is coastal SLAs located within a three hour drive of capital cities that feature most prominently. Examples include Kiama, Surf Coast East (and West), various Gold Coast suburbs, Victor Harbor, Mandurah and Busselton.

In Tasmania and the NT, no SLA exceeds the national average of $209 000 of net owner-occupied property assets per household. At the other extreme, Sydney is the only capital city or state balance category which does not have at least one SLA with an average of less than $100 000 of net owner-occupied property assets.

Table 7.6 Average net owner-occupied property assets, top and bottom three regions for capital cities and state balances, 2003–04

Highest net owner-occupied property assets			*Lowest net owner-occupied property assets*		
SLA	*Number of households*	*Average ($ thousands)*	*SLA*	*Number of households*	*Average ($ thousands)*
Sydney					
Hunter's Hill	4 654	933	Sydney Remainder	12 251	123
Ku-ring-gai	35 201	833	South Sydney	50 426	136
Mosman	12 209	759	Blacktown South West	29 034	139
Rest of NSW					
Kiama	7 722	452	Yallaroi	1 317	43
Wingecarribee	16 985	343	Walgett	3 458	44
Shoalhaven Part B	24 423	304	Cobar	1 977	45
Melbourne					
Bayside: Brighton	14 079	648	Melbourne Inner	5 161	51
Boroondara: Camberwell North	16 046	517	Melbourne Remainder	19 543	113
Manningham East	4 676	471	Wyndham West	6 766	119
Rest of Victoria					
Queenscliffe	1 306	384	Buloke North	1 498	54
Surf Coast West	3 509	354	Loddon North	1 379	62
Surf Coast East	4 832	280	Yarriambiack South	2 386	63
Brisbane					
Chelmer	964	634	Fortitude Valley Inner	895	27
Fig Tree Pocket	1 064	551	Woodridge	7 226	55
Brookfield (incl. Mt Coot-tha)	1 152	483	Wacol	980	58
Rest of Queensland					
Bundall	1 668	480	Mount Isa	7 294	24
Broadbeach Waters	3 244	467	Peak Downs	1 043	25
Runaway Bay	3 926	405	Cloncurry	1 130	25
Adelaide					
Burnside South West	8 961	295	Playford West Central	4 892	49
Burnside North East	8 941	282	Playford: Elizabeth	10 818	53
Adelaide Hills: Ranges	3 761	260	Salisbury Inner North	8 919	81
Rest of SA					
Victor Harbor	5 318	231	Roxby Downs	1 321	43
Alexandrina: Coastal	4 599	216	Whyalla	9 269	49
Yankalilla	1 684	214	Peterborough	878	56
Perth					
Peppermint Grove	563	1 406	Perth Remainder	4 950	46
Nedlands	7 774	572	Kwinana	8 245	85
Cottesloe	3 290	489	Armadale	18 876	103
Rest of WA					
Busselton	10 639	200	Coolgardie	1 418	23
Augusta-Margaret River	4 668	196	Carnarvon	2 293	29
Mandurah	24 520	182	Port Hedland	4 294	41
Tasmania					
Hobart Remainder	21 113	201	West Coast	2 138	53
Kingborough Part A	10 365	199	Derwent Valley Part B	1 087	57
Glamorgan-Spring Bay	1 893	161	Brighton	4 692	57
Northern Territory					
Fannie Bay	1 085	169	City Remainder	774	7
Wanguri	637	168	Palmerston Balance	1 192	24
Nakara	646	158	Katherine	2 905	32
Australian Capital Territory					
Red Hill	1 166	500	Belconnen Town Centre	1 449	59
Yarralumla	1 277	471	Braddon	1 776	97
Deakin	1 090	448	Kingston	1 070	98

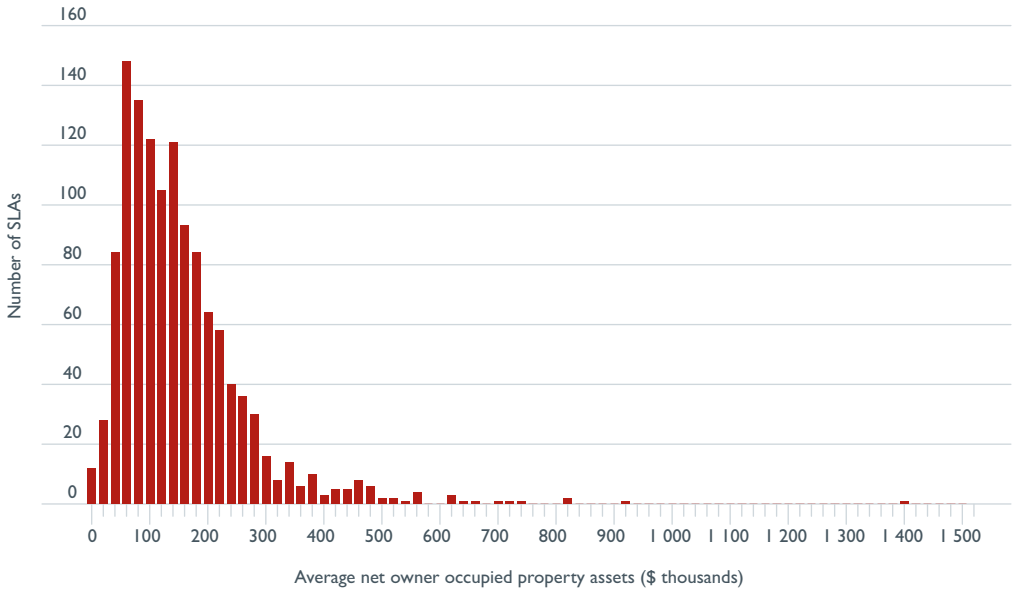
Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

In the capital cities, the SLAs with the lowest net owner-occupied property assets tend to fit into two categories. High density urban areas, such as South Sydney, Inner Melbourne, Inner Fortitude Valley, Perth Remainder and Belconnen Town Centre have very low rates of home ownership, with much of the dwelling stock comprised of rented flats, apartments and townhouses. The second category consists of outer suburban SLAs, such as Blacktown South West, Wyndham West, Woodridge, Playford West Central and Kwinana. These SLAs have amongst the lowest property values in their respective cities, and this is often coupled with a high rate of households with outstanding mortgages.

Outside of the capital cities, the SLAs with the lowest average net owner-occupied property assets tend to be relatively remote SLAs. Many have a mining based economy and/or a substantial indigenous population. In Victoria, agriculturally-based SLAs have the lowest net owner-occupied property assets. The non-remote regional centres which featured amongst the least wealthy regions in Table 6.4, such as Casino, Glen Innes, Moe and Port Pirie, do not feature amongst the regions with the lowest owner-occupied property assets.

Figure 7.8 illustrates the distribution of average net owner-occupied property assets across SLAs. Nationally, the average is $209 000 per household, but the distribution peaks at between $60 000 and $80 000, with 157 SLAs falling within this range. Seventy-seven per cent of SLAs hold less than $209 000 of net owner-occupied property assets. The distribution is highly positively skewed, with Sydney SLAs being most prominent at the top end of the distribution.

Figure 7.8 Frequency histogram of average net owner-occupied property assets for SLAs, 2003–04

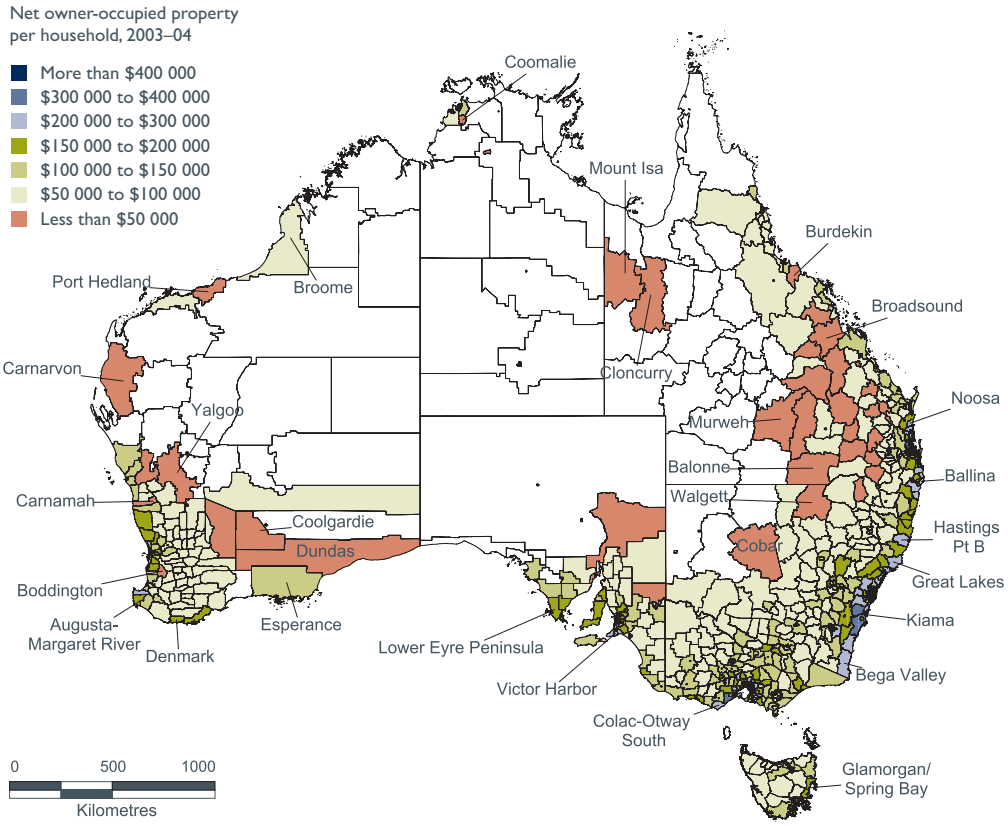


Notes: Based on 1262 in-scope SLAs. Excludes very remote SLAs and discrete indigenous communities.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.9 maps the average net value of owner-occupied property assets for Australian SLAs. The highest values occur in the major cities, but the moderate to high values stretching along the NSW coastline are also a prominent feature of the map. High values can also be seen along Victoria's western coastline. The SLAs with the lowest net owner-occupied property assets tend to be located in more remote parts of Australia, and values of less than $50 000 are particularly prominent in inland Queensland.

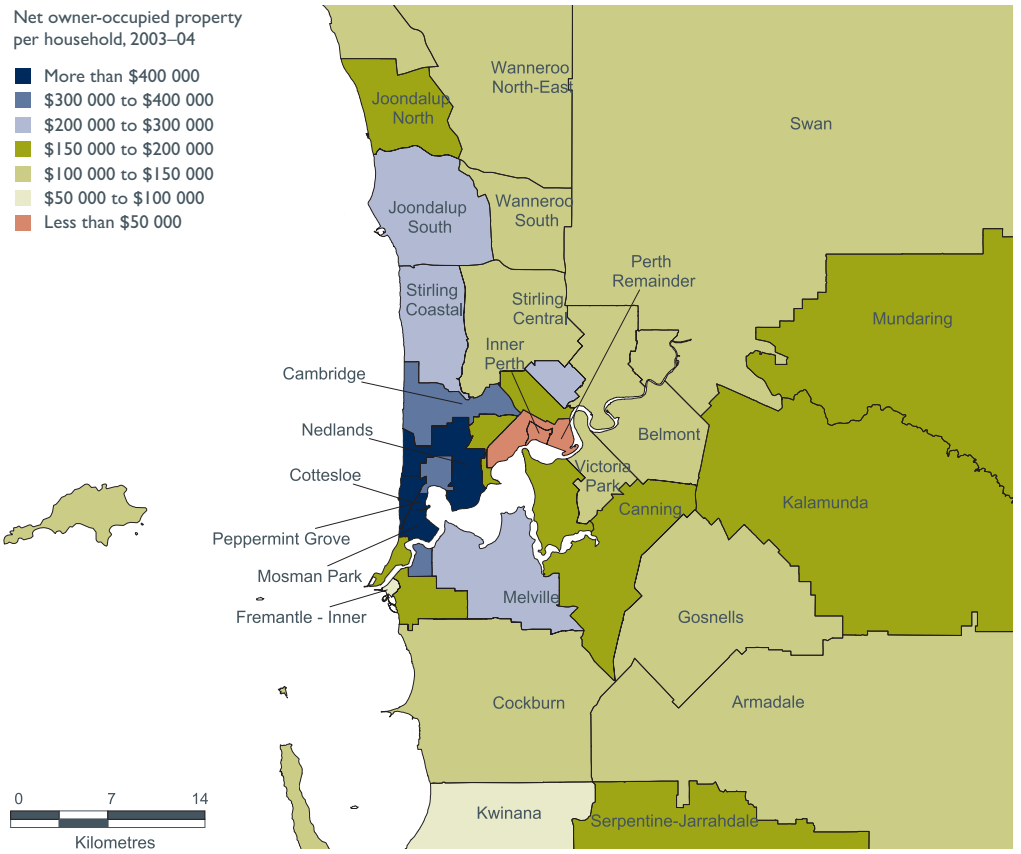
Figure 7.9 Net owner-occupied property assets per household, Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.10 focuses on Perth. The Inner Perth and Perth Remainder SLAs have the lowest net owner-occupied property assets, due to a low rate of home ownership. Kwinana and Inner Fremantle also have net owner-occupied property assets of less than $100 000 per household. The highest values are located in the suburbs to the west of the city centre, namely the Nedlands, Peppermint Grove, Cottesloe and Mosman Park SLAs. To the north of the city centre, the coastal SLAs tend to have more valuable owner-occupied property holdings than the adjoining inland SLAs.

Figure 7.10 Net owner-occupied property assets per household, Perth, 2003–04

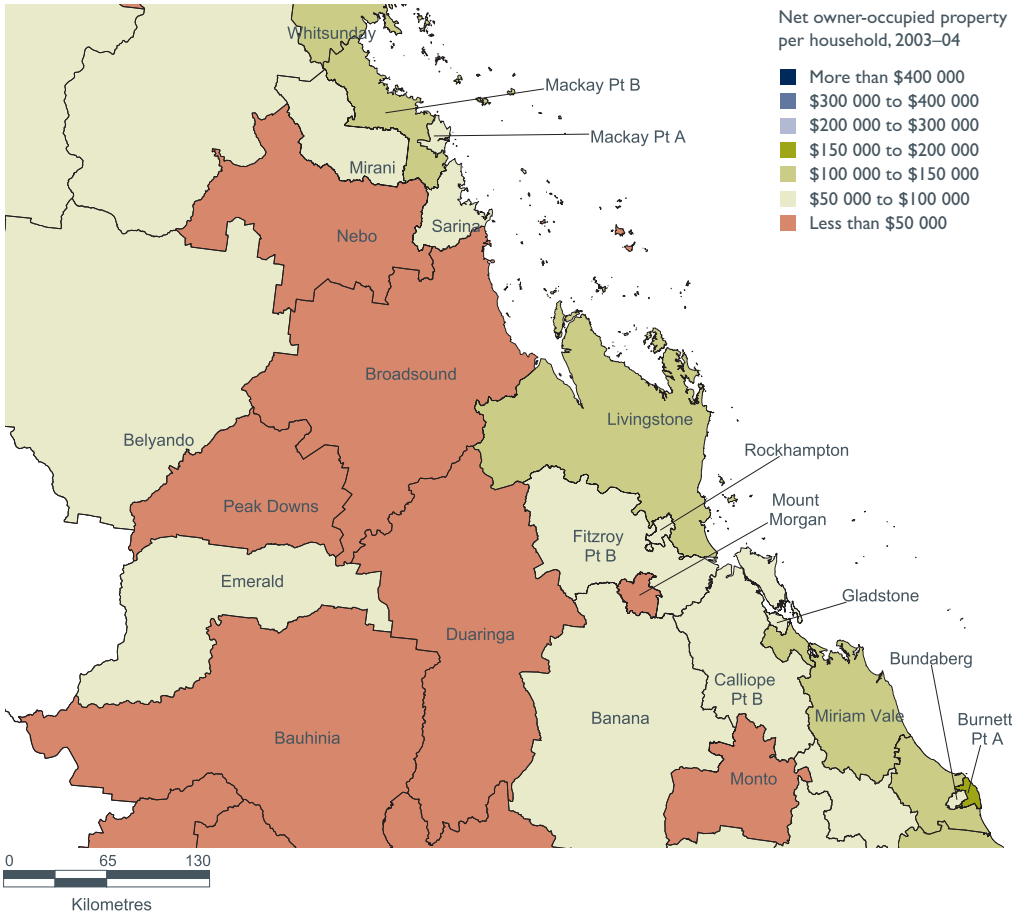


Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.11 shifts the focus to central Queensland, an area in which net owner-occupied property assets are consistently well below the national average. Only the Burnett Part A SLA exceeds $150 000 of net owner-occupied property assets per household. The coal mining SLAs of Nebo, Broadsound, Peak Downs and Duaringa all have an average of less than $50 000, as do the Mount Morgan, Bauhinia and Monto SLAs. In this region, the coastal SLAs tend to have somewhat greater holdings of owner-occupied property assets than the inland regions.

Much of central Queensland has experienced strong economic growth since 2003–04, particularly the Bowen Basin coal mining region. Chapter 8 reveals how this has been reflected in rising property values within the region.

Figure 7.11 Net owner-occupied property assets per household, central Queensland, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Net other property assets

Other property consists of all residential and non-residential property assets owned by households, apart from owner-occupied dwellings and property assets that form part of a business owned by the household. It includes rental properties (residential and commercial), holiday homes, second homes, time-share properties, dwellings under construction and vacant land.

Table 7.7 lists the SLAs with the highest and lowest net holdings of other property assets per household in 2003–04. The top 10 regions all have more than double the national average holdings of $50 900 per household. The top 10 features five Sydney suburbs, two Canberra suburbs and three WA mining SLAs. The Sydney and ACT SLAs all have net worth in excess of $700 000 per household, but net worth is below average for Roebourne ($365 600) and Port Hedland ($321 800). Five of the bottom 10 SLAs are located in the Playford-Salisbury region of northern Adelaide, three are

located in the Logan LGA to Brisbane's south, and the remaining two are located in central Tasmania. All of these regions have average household wealth of less than $300 000.

Table 7.7 Net other property assets per household, top 10 and bottom 10 SLAs, 2003–04

Highest net other property assets				*Lowest net other property assets*			
SLA	*State or territory*	*Number of households*	*Average ($ thousands)*	*SLA*	*State or territory*	*Number of households*	*Average ($ thousands)*
Roebourne	WA	5 387	138	Marsden	QLD	5 882	4
Concord	NSW	10 858	116	Playford: Elizabeth	SA	10 818	4
Yilgarn	WA	604	113	Kingston	QLD	4 471	5
Hunter's Hill	NSW	4 654	113	Woodridge	QLD	7 226	5
Woollahra	NSW	24 191	112	Playford West Central	SA	4 892	8
Drummoyne	NSW	15 011	111	Salisbury Inner North	SA	8 919	12
Port Hedland	WA	4 294	109	Salisbury Central	SA	10 220	13
Deakin	ACT	1 090	106	Southern Midlands	TAS	2 240	13
Yarralumla	ACT	1 277	106	Playford East Central	SA	6 929	13
Burwood	NSW	11 121	104	Central Highlands	TAS	957	13

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

There are only a half dozen SLAs for which the net value of other property assets accounts for more than one-quarter of household wealth. Five are remote mining-based SLAs, namely Roebourne WA (38 per cent), Port Hedland WA (34 per cent), Roxby Downs SA (30 per cent), Coolgardie WA (29 per cent) and Broadsound QLD (27 per cent). The City Remainder SLA in Darwin, which largely consists of defence force rental housing, has 28 per cent of wealth in the form of other property assets.

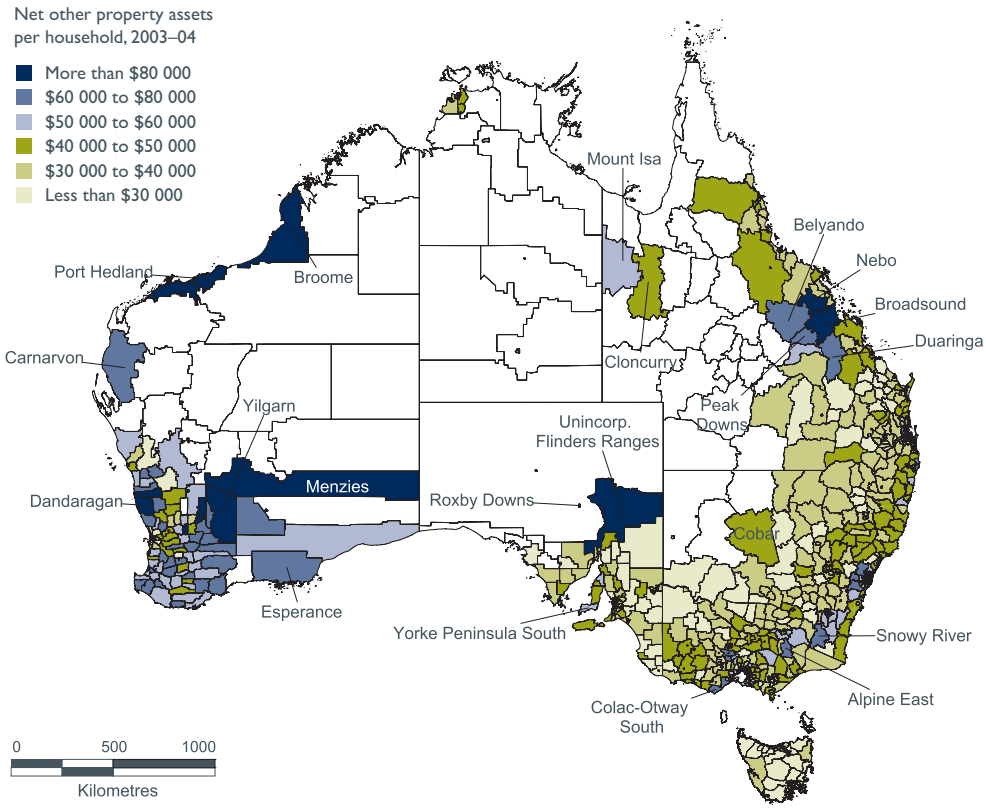
Each of these SLAs has a transient population base with many residents having recently moved to the region for employment reasons. The most important form of tenure for these SLAs is rental housing. Investment in a rental property is a common occurrence.[39] A relatively small proportion of households live in an owner-occupied dwelling within these SLAs.[40]

Negative gearing appears to play an important role for these SLAs. Incomes are high, with RIPT exceeding $50 000 in all six SLAs in 2003–04, and negative gearing is most attractive to those with high marginal tax rates. ATO *Taxation Statistics* data reveals that a high proportion of taxpayers in these SLAs have rental properties and there is a strong tendency for those properties to be negatively geared. Nationally, rental income received is much less than the allowable deductions (for interest payments, capital works, etc) and the average is a net loss of $1873 per taxpayer. Each of the above six SLAs have average rental losses which exceed this amount. For example, rental losses averaged $3487 for each taxpayer with rental income in Port Hedland in 2003–04.

39. Information on the location of these rental properties is not available, but it is likely many are located outside the SLA in which they currently live. Some owners of rental properties may have the intention of moving into these properties in the future. Others may be renting out their previous home.
40. BITRE's forthcoming *Cost of Remoteness* study has found evidence that in mining towns in which there was considerable uncertainty about the medium-term future of mining operations, turnover of housing stock and new housing investment was virtually non-existent, despite severe housing shortages. This appears to be a rational response by residents and investors to the risk of a very low resale value in several years time.

Figure 7.12 provides a national map of the net value of other property on a per household basis. Numerous mining communities stand out as having very high average holdings of other property assets. A number of tourism-dependent regions, such as Broome, Colac Otway South, Snowy River and Alpine East also have relatively high holdings of other property assets. WA has relatively high estimates in comparison to the other states, while SLAs in regional Tasmania have consistently low holdings of other property assets.

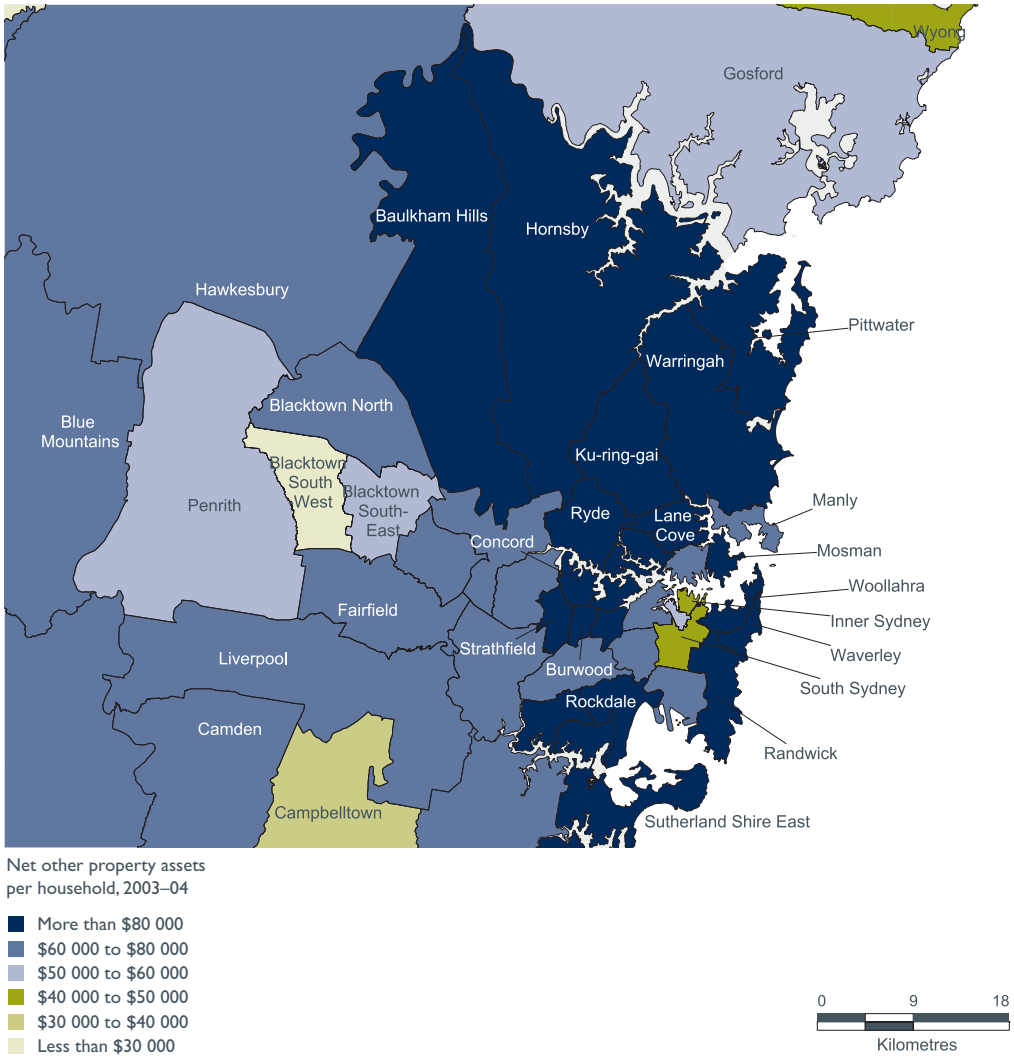
Figure 7.12 Net other property assets per household, Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.13 focuses on Sydney. The northern and eastern suburbs generally have very high holdings of other property assets. Table 7.7 revealed that some of the highest holdings of other property assets occur to the west of the city centre, in Concord, Burwood and Drummoyne. The southern SLAs of Rockdale, Hurstville, Kogarah and Sutherland Shire East also have very high holdings. Blacktown South West is the only Sydney SLA in which the average household has less than $30 000 of other property assets, while Campbelltown, Inner Sydney and South Sydney also lie below the national average.

Figure 7.13 Net other property assets per household, Sydney, 2003–04



Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Superannuation assets

Superannuation is the second most important wealth component, after owner-occupied property assets. Australian households own an average of $63 500 of superannuation assets. Table 7.8 lists the SLAs with the highest and lowest estimated holdings of superannuation assets per household.

The ACT dominates the list of SLAs with the highest average superannuation assets. All of the ACT suburbs have a government superannuation share of 50 per cent or more, while for Brighton and Ku-ring-gai the government superannuation share is 20–30 per cent. All of the top 10 SLAs have above average incomes.

Phillip in the ACT has the highest average superannuation assets, because nearly all households hold at least some superannuation. When the focus is restricted to only those households who own superannuation assets, there are other SLAs which have higher averages, such as Queenscliffe VIC ($154 800), Brighton VIC ($146 000) and Garran ACT ($144 700).

The bottom 10 SLAs are more geographically diverse. Apart from Mount Morgan and the two Tasmanian SLAs, the bottom 10 SLAs have relatively youthful age profiles, suggesting that residents have not yet had time to accumulate substantial superannuation assets. Average incomes are low in nine of the 10 SLAs, with Southbank-Docklands being the exception. Wacol,[41] Mount Morgan and Break O'Day have labour force participation rates of less than 50 per cent.

Table 7.8 Superannuation assets per household, top 10 and bottom 10 SLAs, 2003–04

Highest superannuation				*Lowest superannuation*			
SLA	*State or territory*	*Number of households*	*Average ($ thousands)*	*SLA*	*State or territory*	*Number of households*	*Average ($ thousands)*
Phillip	ACT	1 086	125	Wacol	QLD	980	25
Isaacs	ACT	894	116	Mount Morgan	QLD	1 345	30
Stirling	ACT	740	109	Walgett	NSW	3 458	31
Garran	ACT	1 224	109	Brewarrina	NSW	722	31
Bayside: Brighton	VIC	14 079	108	Wyndham South	VIC	4 569	32
Duffy	ACT	1 166	108	Salisbury Balance	SA	2 552	33
Weetangera	ACT	907	107	Break O'Day	TAS	2 581	33
Ku-ring-gai	NSW	35 201	107	Southbank-Docklands	VIC	4 807	33
Scullin	ACT	1 195	107	Kentish	TAS	2 184	34
Chapman	ACT	915	107	Melton East	VIC	10 161	34

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Superannuation accounts for 14 per cent of household wealth nationally, but is relatively unimportant in some of the wealthiest SLAs. For example, superannuation assets contribute only 4 per cent of net worth in Peppermint Grove in Perth and 6 per cent for Hunter's Hill in Sydney. At the other extreme, superannuation assets account for 31 per cent of household wealth for Phillip in the ACT. Superannuation assets are also an important contributor to wealth for some of the least wealthy SLAs in Australia, accounting for more than one-quarter of net worth in Woodridge, Marsden, Mount Isa, Vincent and Kelso in Queensland and Elizabeth in SA.

BITRE's small area estimates of average superannuation assets show only a limited degree of spatial variation, with 80 per cent of the in-scope SLAs having between $40 000 and $80 000 of superannuation assets.

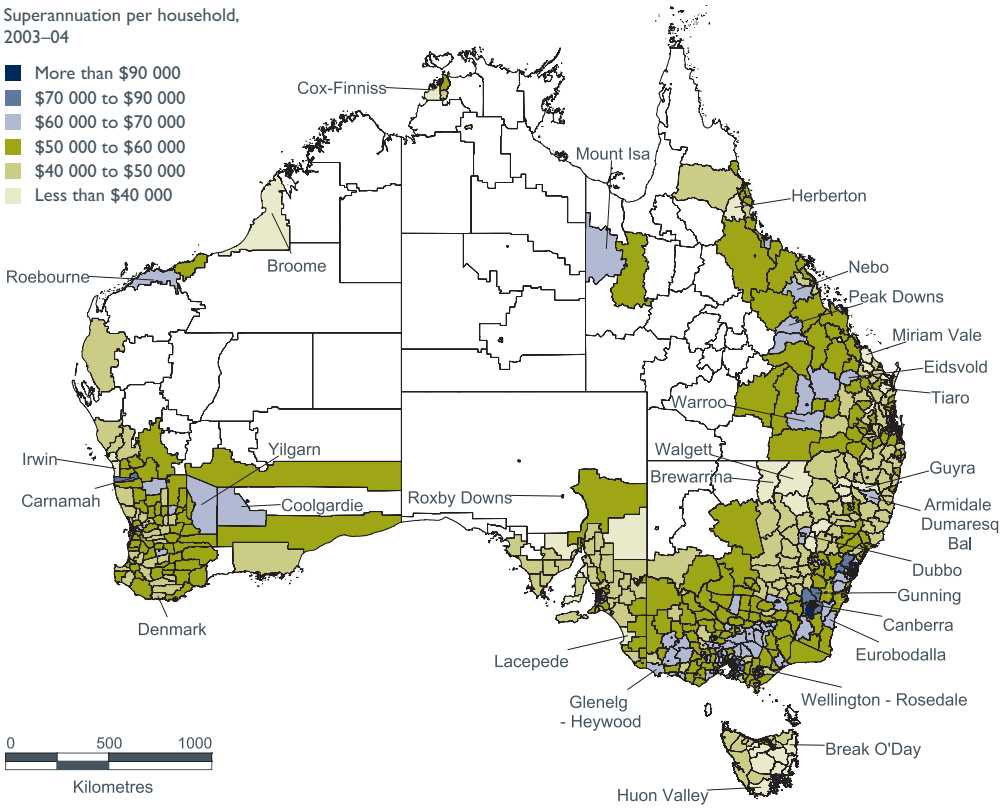
Figure 7.14 maps average superannuation assets nationally. Superannuation assets are generally greater in the capital cities than in regional Australia. Canberra has particularly high superannuation assets, due to the dominant role of public sector

41. Wacol is a Brisbane suburb which contains a large prison and hospital precinct. About 40 per cent of the population of Wacol is sourced from that prison and hospital complex.

employment in the ACT, and a number of NSW SLAs within commuting distance of Canberra also hold substantial superannuation assets. Mining-based SLAs such as Coolgardie, Roebourne, Mount Isa, Roxby Downs and Peak Downs also have high superannuation assets. The SLAs surrounding the regional service centres of Dubbo, Wagga Wagga, Armadale and Narrogin are a further type of SLA with high average superannuation assets.

SLAs in northern NSW and regional Tasmania tend to have relatively low superannuation assets.

Figure 7.14 Superannuation assets per household, Australia, 2003–04



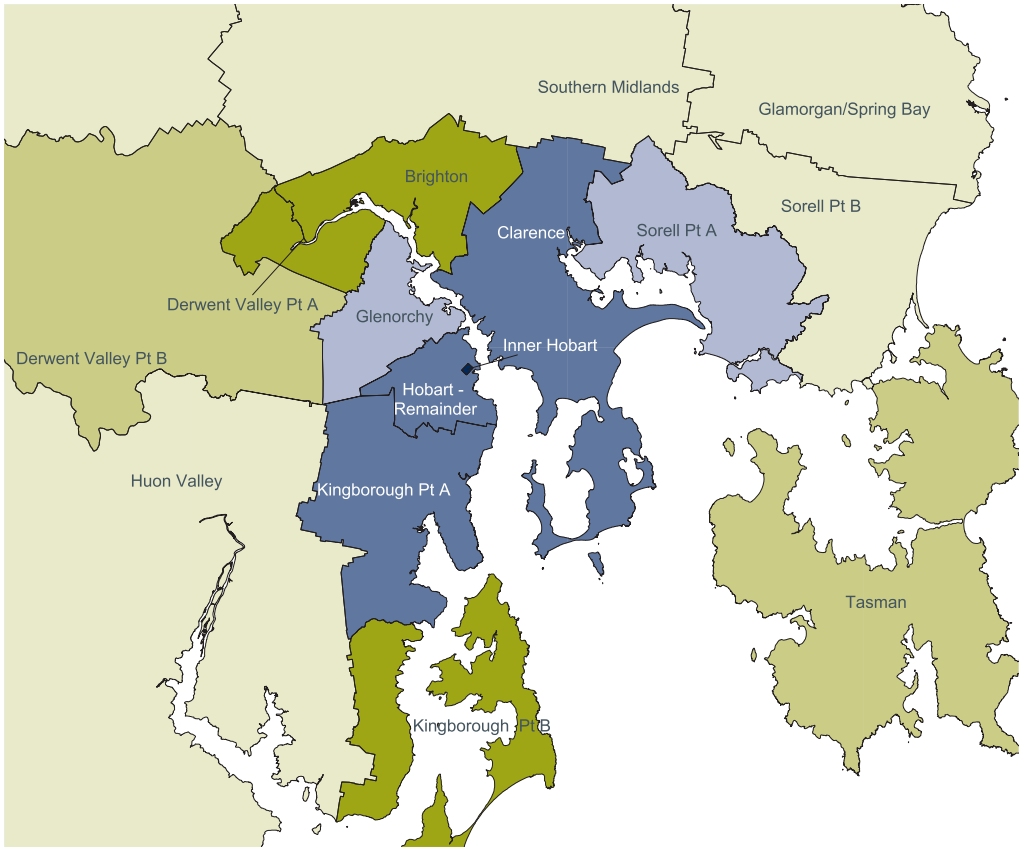
Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.15 maps average superannuation assets for Hobart and its surrounds. Hobart city and suburbs have markedly higher average superannuation holdings than the neighbouring, predominantly rural SLAs. Average superannuation holdings are highest in Inner Hobart, but also exceed $70 000 per household in Hobart Remainder, Kingborough Part A and Clarence.

Net business assets

This category includes the value of both incorporated and unincorporated business assets owned by households, and is net of liabilities. Net business assets contribute 8 per cent of the net worth of Australian households, but are the dominant form of asset in many rural and remote SLAs. This is because a substantial proportion of households in rural and remote SLAs own a business. The 2003–04 SIH found that, on average, each agricultural business is worth $818 000, compared to $292 000 for other businesses.[42]

Figure 7.15 Superannuation assets per household, Hobart, 2003–04



Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

42. This is the average net worth of businesses which reported a non-zero resale value.

Table 7.9 highlights the regions with the highest and lowest estimates of net business assets per household.

Eight of the ten lowest values are in Canberra, with the remaining two being from Adelaide and Townsville. All of the bottom 10 have estimated business ownership rates of 6 per cent or less and an average value per business of less than $200 000. The prominence of ACT regions in the bottom 10 is due to low average business assets per household of $10 900, according to the 2003–04 SIH. This reflects the lesser role of self-employment in the ACT.

The highest values are all in strongly agricultural areas, particularly WA's wheatbelt. All of the top 10 SLAs have estimated business ownership rates of more than 25 per cent and an average value per business in excess of $1 million.

In Lake Grace SLA, approximately half of all employed persons are self-employed and the majority of the self-employed operate farm businesses. The Lake Grace agricultural sector specialises in wheat production, with some additional production of wool and barley. According to the ABARE *Farm Survey*, broadacre farms in the North and East Wheat Belt region (to which Lake Grace belongs) were worth $2.8 million each in 2003–04 (ABARE 2006). Dalwallinu and Gnowangerup SLAs also specialise in wheat production. The agricultural specialisations of the remaining top 10 SLAs vary:

- Boyup Brook and Kojonup specialise in wool production
- Moyne North West and Corangamite South specialise in dairy
- Conargo specialises in rice production
- Loddon North and Bungil have a diverse agricultural sector, focused around wheat and livestock (and for Loddon North, dairy).

Table 7.9 Net business assets per household, top 10 and bottom 10 SLAs, 2003–04

Highest net business assets				*Lowest net business assets*			
SLA	*State or territory*	*Number of households*	*Average ($ thousands)*	*SLA*	*State or territory*	*Number of households*	*Average ($ thousands)*
Lake Grace	WA	653	601	Belconnen Town Centre	ACT	1 449	3
Conargo	NSW	555	500	Vincent	QLD	893	4
Kojonup	WA	844	483	Phillip	ACT	1 086	4
Gnowangerup	WA	554	452	Playford: Elizabeth	SA	10 818	5
Dalwallinu	WA	518	446	Lyons	ACT	1 136	5
Boyup Brook	WA	642	413	Turner	ACT	1 413	6
Moyne North West	VIC	1 092	410	Charnwood	ACT	1 239	6
Bungil	QLD	846	383	Page	ACT	1 127	6
Corangamite South	VIC	2 872	369	Downer	ACT	1 482	6
Loddon North	VIC	1 379	352	Braddon	ACT	1 776	6

Note: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Eight of the top 10 regions do not contain an urban centre, and the Corangamite South and Kojonup SLAs contain only a single small urban centre of between 1000 and 1500 people. While the top 10 regions have a range of agricultural specialisations,

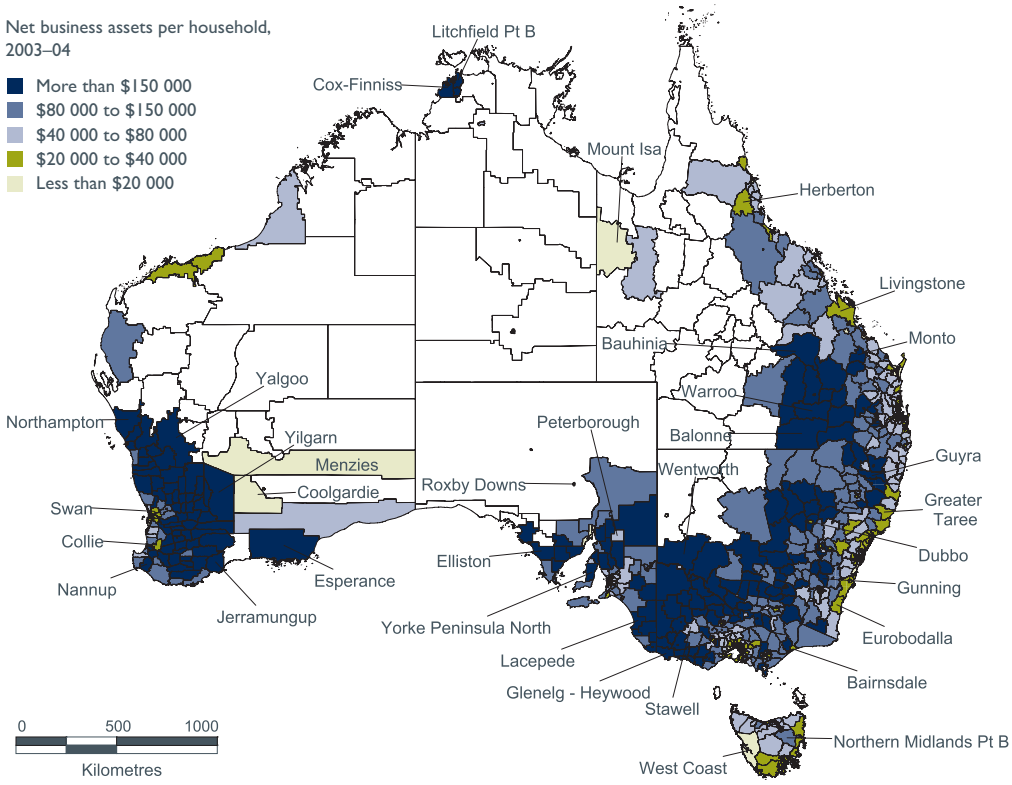
what they all have in common is that a high proportion of households in the region own an agricultural business.

The distribution of the average net value of business assets across the in-scope SLAs is very polarised. Two-thirds of regions have less than $50 000 of business assets per household, while a small number of SLAs have more than $400 000.

Figure 7.16 maps net business assets at the national scale. The very high average holdings of net business assets in inland WA and throughout much of the Murray Darling Basin are dominant features. The Eyre and Yorke Peninsulas in SA also contain many SLAs with high net business assets. These areas have high business assets because a substantial proportion of households own agricultural businesses.

Much lower estimates of net business assets can be seen along the NSW coastline, in remote WA and in Tasmania. Northern Queensland SLAs tend to have lower business assets than SLAs in the south west of the state. However, many of the SLAs with the lowest holdings of business assets are located in the major cities and the larger regional centres, and so are not visible in Figure 7.16.

Figure 7.16 Net business assets per household, Australia, 2003–04

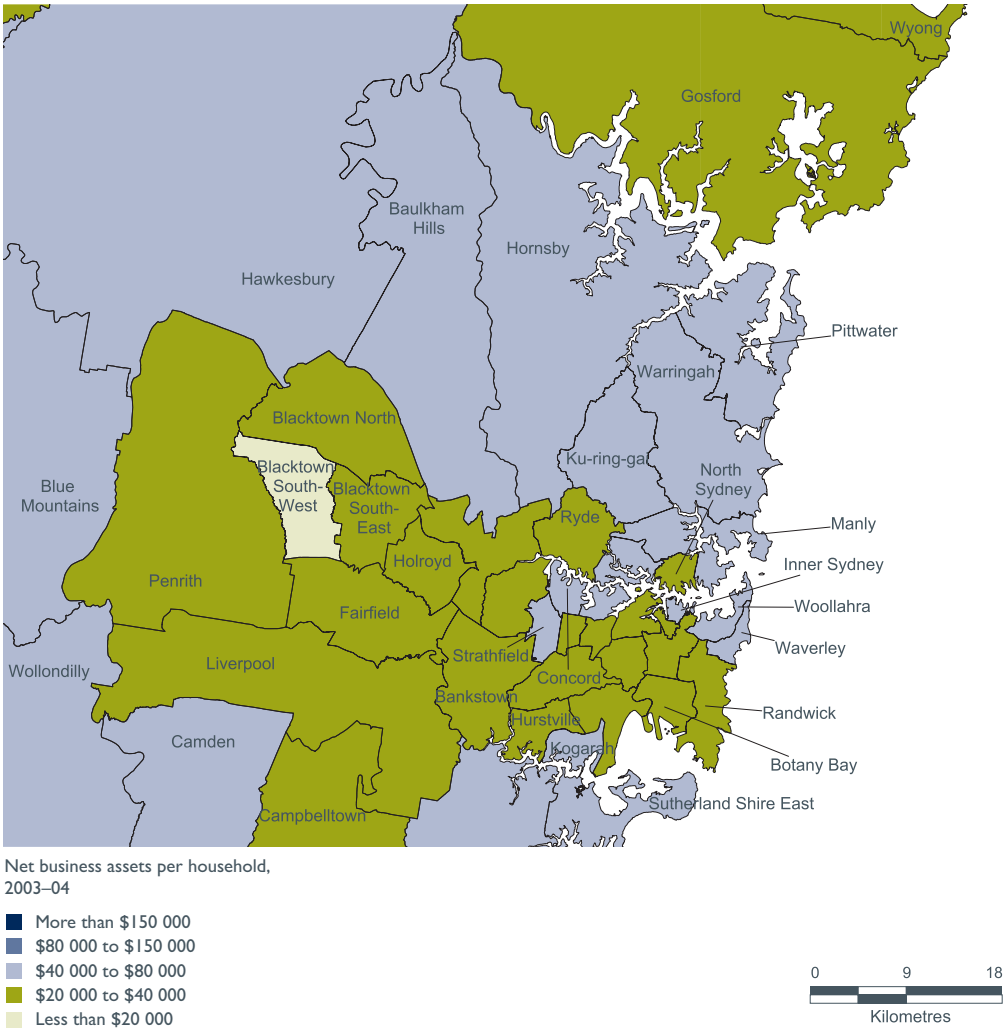


Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.17 focuses on Sydney. Net business assets consistently average less than $80 000, but only Blacktown South West has net business assets of less than $20 000. All of the Sydney SLAs which have net worth of more than $750 000 have net business

assets in the $40 000 to $80 000 range. A number of SLAs on Sydney's outskirts, with much lower wealth, also have net business assets of between $40 000 and $80 000 (i.e. Blue Mountains, Camden, Hawkesbury and Wollondilly). Between 10 and 15 per cent of households in each of these regions own a business. Inner Sydney is another moderate wealth SLA which has above average business assets.

Figure 7.17 Net business assets per household, Sydney, 2003–04



Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Interest earning assets

Interest earning assets comprise accounts held with financial institutions,[43] and debentures and bonds. On average, each Australian household held $22 000 of interest earning assets in 2003–04.

Table 7.10 lists the SLAs with the highest and lowest estimates of interest earning assets per household. The highest 'bank balances' are in Sydney (Mosman, Woollahra, Hunter's Hill, Ku-ring-gai) and Perth (Mosman Park, Peppermint Grove, Cottesloe, Nedlands), while two Gold Coast canal suburbs also feature (Benowa, Bundall). All of the top 10 SLAs have net worth of more than $750 000 per household.

The lowest bank balances are concentrated in just two areas: the Logan LGA to the south of Brisbane (Marsden, Kingston, Loganlea, Woodridge) and the Palmerston LGA near Darwin. Mortgage-belt areas, such as Palmerston, tend to have relatively low average bank balances, as surplus cash is used to pay off the mortgage. All of the bottom 10 SLAs have net worth of less than $260 000 per household.

Table 7.10 Interest earning assets per household, top 10 and bottom 10 SLAs, 2003–04

Highest interest earning assets				*Lowest interest earning assets*			
SLA	*State or territory*	*Number of households*	*Average ($ thousands)*	*SLA*	*State or territory*	*Number of households*	*Average ($ thousands)*
Mosman	NSW	12 209	95	Marsden	QLD	5 882	7
Woollahra	NSW	24 191	93	Bakewell	NT	1 303	8
Hunter's Hill	NSW	4 654	71	Palmerston Balance	NT	1 192	8
Ku-ring-gai	NSW	35 201	70	Kingston	QLD	4 471	8
Mosman Park	WA	3 671	65	Loganlea	QLD	2 769	8
Peppermint Grove	WA	563	63	Durack	NT	781	8
Cottesloe	WA	3 290	63	Moulden	NT	1 138	8
Nedlands	WA	7 774	62	Woodroffe	NT	1 195	8
Benowa	QLD	2 566	59	Gray	NT	1 264	8
Bundall	QLD	1 668	59	Driver	NT	1 011	8

Notes: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities. These estimates are based on ATO interest income data for postcodes. Estimates for neighbouring SLAs are often very similar when SLAs share one or more common postcode. For example, the 4114 postcode contributes to the estimates for Marsden, Kingston and Loganlea.

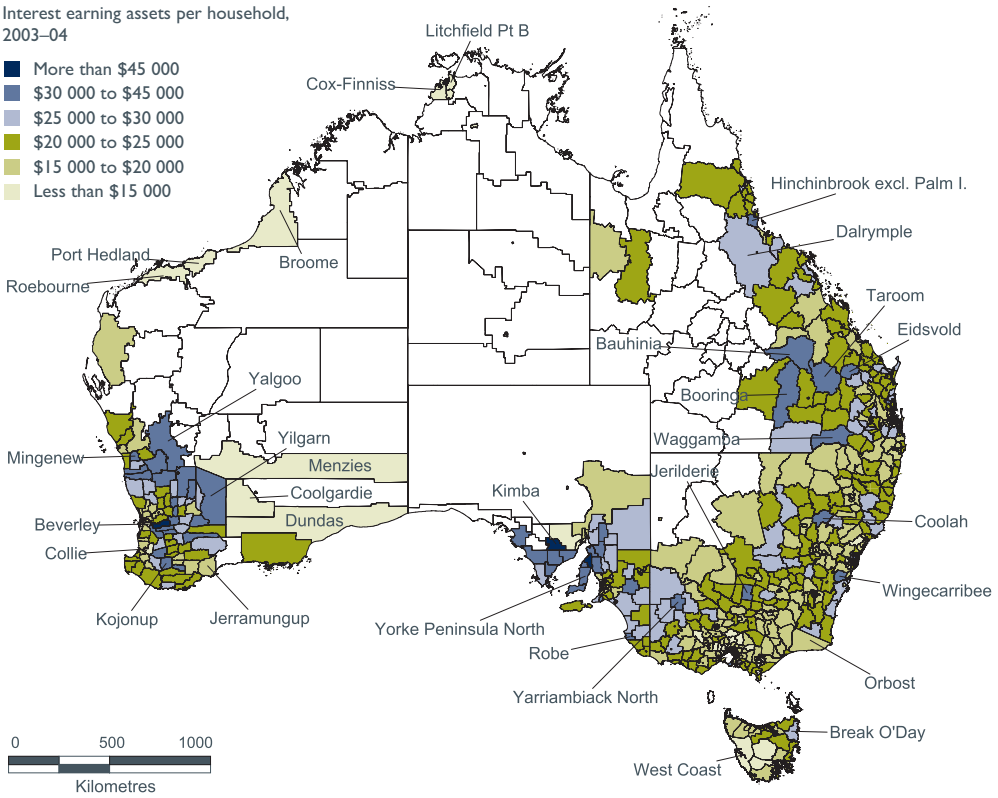
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.18 maps interest earning assets per household across Australian SLAs. High interest earning assets are evident in mid west WA, the Eyre and Yorke Peninsulas of SA, and the central west of Queensland. Several other agriculturally-based areas stand out as having higher interest earning assets than their neighbours, including Coolah, Jerilderie, Karoonda East Murray, Yarriambiack North and Kojonup. Thus, households in some, but certainly not all, agricultural SLAs have high holdings of interest earning assets.

While the lowest values occur in the major cities, Queensland's Bowen Basin, eastern Victoria and the more remote parts of WA and NSW also have below average holdings of interest earning assets.

43. In concept, the SIH captures balances in all accounts held with financial institutions. However, in practice, many everyday transaction accounts appear not to have been captured by the SIH, because respondents did not regard them as a 'financial investment'.

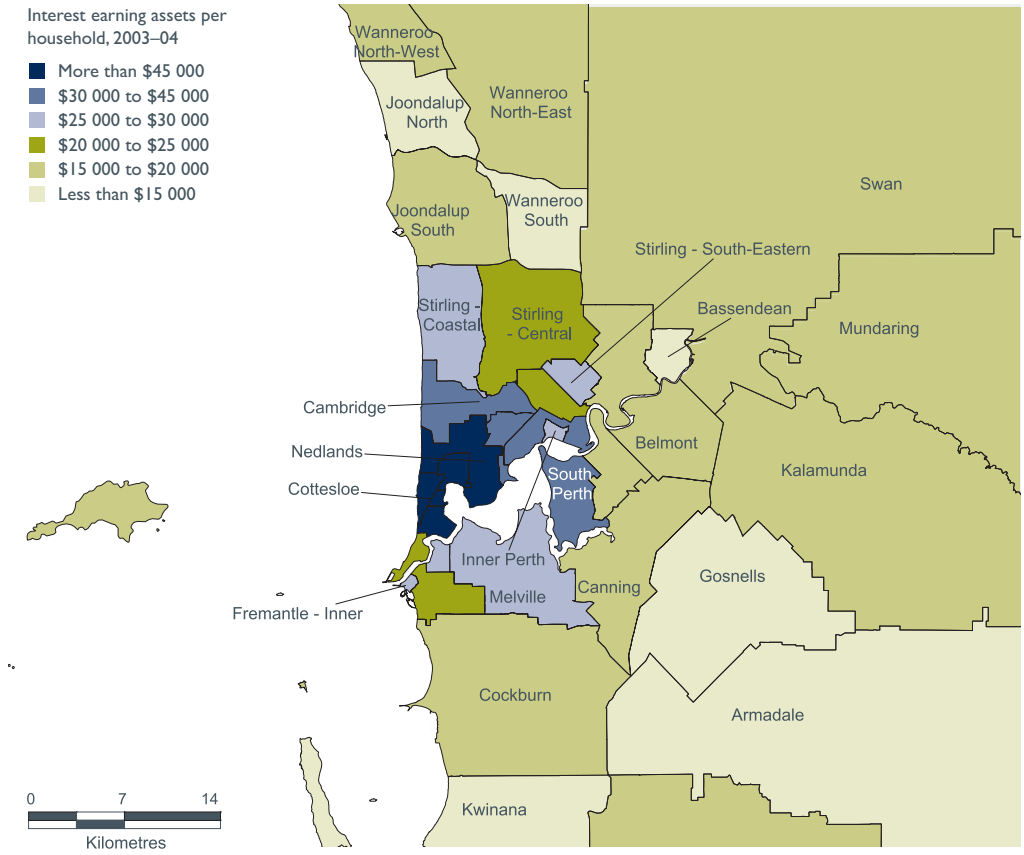
Figure 7.18 Interest earning assets per household, Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Figure 7.19 maps interest earning assets for Perth. The highest values occur for a cluster of high net worth SLAs to the west of the city centre (i.e. Peppermint Grove, Nedlands, Mosman Park, Claremont and Cottesloe). The lowest holdings of interest earning assets are evident in some of Perth's outer suburbs.

Figure 7.19 Interest earning assets per household, Perth, 2003–04



Note: Based on 2001 ASGC SLA boundaries.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Net vehicle assets

The average Australian household owns $14 500 of net vehicle assets,[44] which equates to just 3 per cent of household wealth. Table 7.11 lists the regions with the highest and lowest average holdings of net vehicle assets.

We saw in Chapter 5 that rural Australia has relatively high vehicle assets, and Table 7.11 shows that the highest net vehicle assets are mainly in lightly populated rural areas. Several metropolitan regions also feature, such as Brookfield (including Mt Coot-tha) in Brisbane and Manningham East in Melbourne. All of the top 10 SLAs have an above average proportion of self-employed individuals. The self-employed tend to have high holdings of vehicle assets, which flows partly from the fact many self-employed are involved in industries in which vehicles are needed to do business (e.g. agriculture, tradespersons) and multiple or costly vehicles may be required. It is also likely to flow partly from the fact that business owners can treat business-related vehicle operating expenses (including depreciation) as tax deductions, reducing the effective cost of those vehicles.

44. The SIH vehicle assets data reflects the value of all vehicles which are not used exclusively for business purposes.

The lowest vehicle holdings tend to be in either:

- High-density living areas of Australia's major cities (e.g. Inner Melbourne, City Remainder in Brisbane); or
- Low socio-economic status suburbs of the major cities in which 15–40 per cent of households are in public housing (e.g. Inala and Woodridge in Brisbane's south, Elizabeth in Adelaide's north and Garbutt in Townsville).

Table 7.11 Net vehicle assets per household, top 10 and bottom 10 SLAs, 2003–04

Highest net vehicle assets				*Lowest net vehicle assets*			
SLA	*State or territory*	*Number of households*	*Average ($ thousands)*	SLA	*State or territory*	*Number of households*	*Average ($ thousands)*
Lake Grace	WA	653	28	Inala	QLD	4 654	7
Conargo	QLD	555	27	Inner Melbourne	VIC	5 161	7
Boyup Brook	WA	642	27	Woodridge	QLD	7 226	8
Peppermint Grove	WA	563	27	Playford: Elizabeth	SA	10 818	8
Bungil	QLD	846	26	Chermside	QLD	3 112	8
Brookfield (incl. Mt Coot-tha)	QLD	1 152	26	Playford West Central	SA	4 892	8
Manningham East	VIC	4 676	25	City Remainder	QLD	1 815	8
Kojonup	WA	844	25	Garbutt	QLD	1 018	8
Taroom	QLD	1 075	25	Belconnen Town Centre	ACT	1 449	8
Dalwallinu	WA	518	25	Zillmere	QLD	3 278	9

Notes: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

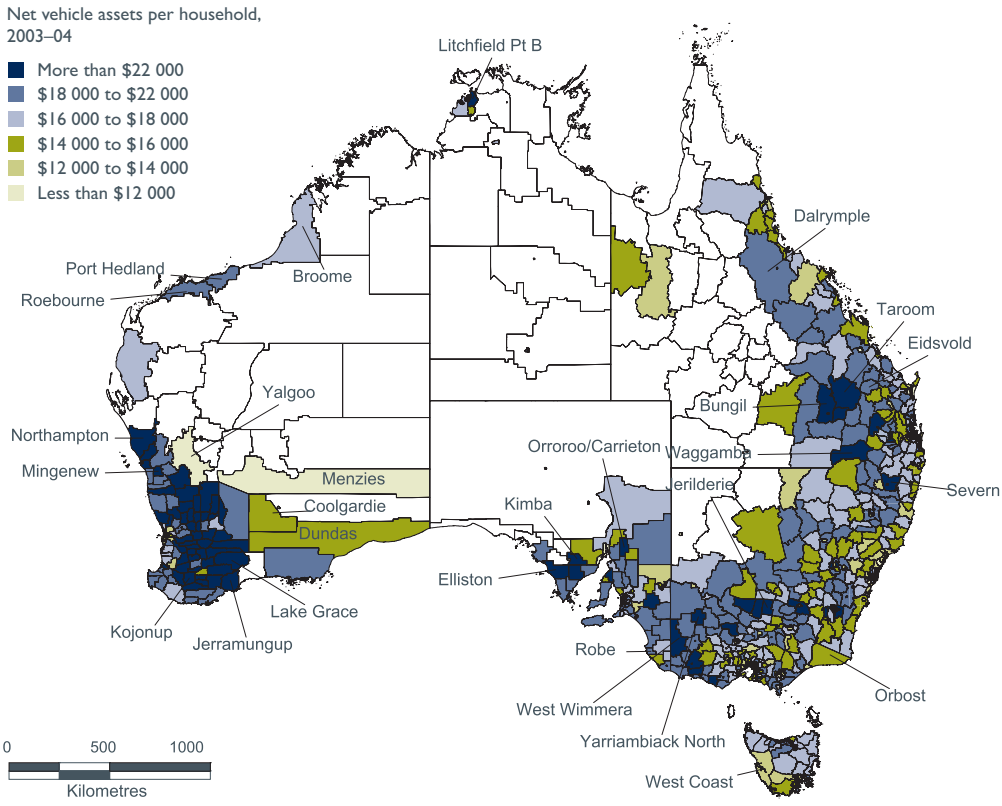
Vehicle ownership rates are just 33 per cent in Inner Melbourne and 48 per cent in the City Remainder SLA of Brisbane. However, the households which do own vehicles own relatively valuable vehicles. For the remaining bottom 10 SLAs, vehicle ownership rates range between 75 and 85 per cent, but these vehicles are not worth much.

Net vehicle assets are a relatively unimportant component of net worth in the wealthiest SLAs, accounting for just 1.4 per cent of net worth in Peppermint Grove and Hunter's Hill. Net vehicle assets are much more important for the Palmerston Balance and Durack SLAs in Darwin, where they contribute about 9 per cent of net worth.

BITRE's small area estimates of net vehicle assets show only a limited degree of spatial variation, with 81 per cent of the in-scope SLAs having between $10 000 and $20 000 of net vehicle assets.

Figure 7.20 maps net vehicle assets at the national scale. The key feature is the above average estimates of net vehicle assets for rural SLAs. The major cities and regional centres generally have lower net vehicle assets.

Figure 7.20 Net vehicle assets per household, Australia, 2003–04



Notes: Based on 2001 ASGC SLA boundaries. Excludes very remote SLAs and discrete indigenous communities.
Source: BITRE analysis based on BITRE *Household Wealth Database*.

Shares and trusts

Each Australian household owned an average of $27 400 of share and trust assets in 2003–04. This wealth component excludes shares in own incorporated businesses, which are reflected within the net business assets component.

Table 7.12 highlights the SLAs with the highest and lowest estimated share and trust assets per household. The SLAs with the greatest share and trust holdings are established inner to middle ring suburbs of Sydney, Melbourne, Brisbane and Perth. All of the top 10 have average net worth of more than $700 000.

The SLAs with the lowest share and trust holdings are largely concentrated in disadvantaged outer metropolitan suburbs, including the Logan LGA to the south of Brisbane, Adelaide's north, and Blacktown South West in Sydney. Two regional Tasmanian SLAs also feature in the bottom 10, which is not surprising since share and trust assets averaged just $9700 per Tasmanian household, according to the 2003–04 SIH. All of the bottom 10 SLAs have average net worth of $310 000 or less.

While the capital cities dominate Table 7.12, there is considerable diversity in average share and trust assets across rural and regional SLAs. Outside of the capital cities, average share and trust assets of more than $40 000 per household were evident in:

- numerous Gold Coast and Sunshine Coast SLAs
- Wingecarribee (Southern Highlands), Inner Newcastle, Holbrook, Murrumbidgee and Walcha SLA's in NSW
- Newtown and Queenscliffe, within and adjacent, respectively, to Geelong in Victoria
- numerous SLAs in WA's wheatbelt.

Table 7.12 Share and trust assets per household, top 10 and bottom 10 SLAs, 2003–04

Highest share and trust assets				*Lowest share and trust assets*			
SLA	*State or territory*	*Number of households*	*Average ($ thousands)*	*SLA*	*State or territory*	*Number of households*	*Average ($ thousands)*
Woollahra	NSW	24 191	244	Salisbury Central	SA	10 220	2
Mosman	NSW	12 209	204	Marsden	QLD	5 882	2
Stonnington: Prahran	VIC	23 564	197	Playford: Elizabeth	SA	10 818	2
Peppermint Grove	WA	563	184	Salisbury Inner North	SA	8 919	2
Cottesloe	WA	3 290	183	Blacktown South West	NSW	29 034	2
Hunter's Hill	NSW	4 654	179	Kingston	QLD	4 471	2
Bayside: Brighton	VIC	14 079	169	Woodridge	QLD	7 226	2
Stonnington: Malvern	VIC	18 558	167	Tasman	TAS	945	3
Mosman Park	WA	3 671	154	Kentish	TAS	2 184	3
Ascot	QLD	2 298	154	Playford West Central	SA	4 892	3

Notes: Excludes SLAs with fewer than 500 households, very remote SLAs and discrete indigenous communities.
These estimates are based on ATO imputation credits data for postcodes. Estimates for neighbouring SLAs are often very similar when SLAs share one or more common postcode. For example, the 4114 postcode contributes to the estimates for Marsden, Kingston and Woodridge.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Some SLAs with agriculturally based economies have very high average share and trust assets (e.g. Holbrook, Walcha, Murrumbidgee, WA wheatbelt), but while holding share or trust assets may be a useful risk management strategy for certain farmers, it is not a general feature of agricultural regions. There are several agriculturally-based SLAs with less than $10 000 per household of share and trust assets, including Campaspe South (VIC), Manilla (NSW), Murweh (QLD), Biggenden (QLD), Kolan (QLD) and Latrobe Part B (TAS). Other regional ares with share and trust assets of less than $10 000 per household include:

- the majority of Tasmanian SLA's outside of Hobart
- Eaglehawk (Bendigo), Inner Corio (Geelong) and Moe in Victoria

- Greater Lithgow, Manilla, Brewarrina and Cobar in NSW
- Mount Morgan, Mount Isa, Caboolture Part B and two SLAs in Queensland's Thuringowa LGA
- Port Augusta, Mallala, Peterborough, Whyalla, Roxby Downs and Port Pirie City in SA
- Katherine and all Alice Springs SLAs in the NT.

The relative importance of share and trust assets differs considerably across SLAs. Share and trust assets account for less than 1 per cent of net worth in Blacktown South West NSW; Marsden QLD; Salisbury Central and Inner North SA; and Tasman, Kentish and Southern Midlands TAS. In contrast, share and trust assets account for more than 20 per cent of net worth in the following SLAs:

- Stonnington: Prahran (26 per cent), Inner Melbourne (25 per cent) and Melbourne Remainder (20 per cent) in Victoria
- Adelaide City SA (23 per cent)
- Ascot (21 per cent) in Brisbane.

There is massive variation in the average value of share and trust assets per household across SLAs, with two SLAs having share and trust assets of more than $200 000 per household, 25 SLAs having an average of more than $100 000, and 51 SLAs averaging less than $5000 per household. Roughly two-thirds of SLAs have average share and trust assets of less than $25 000 per household.

Dwelling contents

The 2003–04 SIH assumes that all Australian households have a non-zero value of dwelling contents. Average dwelling contents are particularly high in the ACT ($69 000), while all other capital city and state balance categories have estimates of between $39 000 and $54 000 (ABS 2006b).

At the small area scale, average dwelling contents range from a low of $30 400 for Darwin City Remainder to a high of $86 400 for Fadden in the ACT. Reflecting the high SIH estimate, ACT SLAs dominate the list of SLAs with the highest average dwelling contents. There is greater diversity amongst the SLAs with the lowest average dwelling contents:

- Garbutt ($31 200 of dwelling contents per household) in Townsville and City Remainder ($30 400) in Darwin both contain the city's major airport and a RAAF base.
- Inala ($31 100) and Wacol ($32 100) in Brisbane's south contain substantial public housing.
- Cairns City ($31 400), Coolangatta ($32 200), Inner Fortitude Valley ($32 400) and Perth Remainder ($33 500) are all dominated by apartments, flats and other high density accommodation.

The regions which tend to have the highest dwelling contents per household are those in which incomes are high, home ownership is high, separate houses are the dominant form of dwelling and dwelling size is large.

Overall, dwelling contents are distributed very evenly across regions. In part, this is because all households have some dwelling contents, while the ownership rate of other assets can differ considerably across regions. As a consequence of this limited spatial variation, dwelling contents make a relatively minor contribution to net worth in the wealthiest regions, but are much more important to the least wealthy regions. For example, dwelling contents make up just 3 per cent of net worth in Peppermint Grove, but contribute 24 per cent of net worth in Playford West Central, Elizabeth and Mount Morgan.

Summary

For the majority of regions the composition of the wealth portfolio is broadly similar to the national portfolio, with owner-occupied property assets being the single most important asset in 82 per cent of SLAs. For 16 per cent of SLAs, net business assets are the most important asset category, while the remaining 2 per cent of SLAs have other property assets, superannuation or shares and trusts as their principal asset type.

Net owner-occupied property assets, net business assets and shares and trusts are the key sources of regional differences in household wealth.

- The relative importance of owner-occupied property assets tends to rise with a region's average net worth. The SLAs with the highest net owner-occupied property assets are in the major cities, especially Sydney. High values also occur along the NSW coastline and Victoria's western coastline. The SLAs with the lowest net owner-occupied property assets tend to be located in more remote parts of Australia, and values of less than $50 000 are particularly prominent in inland Queensland and in mining towns.
- Net business assets are the dominant form of asset in many rural and remote SLAs, because a substantial proportion of rural and remote households own a farm business. Net business assets are generally much lower in the major cities and regional centres.
- Although share and trust assets contribute only 6 per cent of net worth nationally, average holdings vary enormously across regions, with 51 SLAs averaging less than $5000 per household, while 27 SLAs average more than $100 000 per household.

The regions with the highest overall level of indebtedness are typically outer suburbs or commuting areas of metropolitan centres. They are heavily indebted because the amount owing on mortgages represents a high proportion of owner-occupied property assets. Some mining regions differ, being more likely to borrow to finance investment property, rather than owner-occupied property assets.

Key messages

A region's average holdings of share and trust assets provides the best indication of the region's relative position in terms of average net worth.

Variation in property prices is the most important source of spatial differences in the net value of owner-occupied property, which in turn is a fundamental driver of spatial differences in net worth.

The composition of a region's wealth portfolio depends on the average wealth of that region. For example, dwelling contents and superannuation represent a large part of wealth in the least wealthy areas, but are relatively unimportant in the wealthiest areas.

For the majority of regions the composition of the wealth portfolio is broadly similar to the national portfolio, with owner-occupied property assets being the single most important asset in 82 per cent of SLAs.

Net owner-occupied property assets are highest in the capital cities, particularly Sydney. They are lowest for inner city, mining and remote SLAs.

Other property assets, such as investment properties, are the major asset category for a small number of mining communities and inner city SLAs.

Net business assets are the major asset category for 16 per cent of regions. Two-thirds of all regions have less than $50 000 of net business assets, while a small number of agricultural regions have more than $400 000 of net business assets per household.

Average superannuation holdings are highest in Canberra's suburbs.

The largest bank balances occur in Sydney, Perth's western suburbs and the Gold Coast canal suburbs.

The places with the highest average debt are outer suburbs and commuting areas of Australia's capital cities. Baulkham Hills in Sydney has the highest average debt, but this is coupled with substantial asset holdings.

The debt-to-asset ratio is highest in the larger cities of northern Australia, particularly the Palmerston area of Darwin and Townsville-Thuringowa.

Mining communities and outer suburbs of the capital cities also tend to have high to debt-to-asset ratios.

Chapter 8 Growth in wealth since 2003–04

This chapter outlines changes in household wealth between 2003–04 and 2005–06 for Australia as a whole and for the 14 capital city and state balance regions. This will provide some indication of the extent to which BITRE's 2003–04 SLA estimates of net worth per household are likely to remain relevant. The possibility of creating a time series of household wealth at the small area level will then be discussed.

National growth, 2003–04 to 2005–06

The 2005–06 SIH gives us an opportunity to study the recent changes in household wealth for all households (ABS 2007d). Table 8.1 outlines the components of net worth for 2005–06 and compares them with 2003–04. Overall there has been a 20 per cent increase in net worth to $563 000 per household. Liabilities increased by 33 per cent, which outpaced total asset growth of 22 per cent. While assets are universally owned, due largely to dwelling contents, only 72 per cent of households own debts, a decrease of 3 percentage points. This small reduction in the incidence of debt was more than offset by the 39 per cent increase in the average value of debts per contributor household.

While owner-occupied housing still remains an important component of assets, its relative importance has fallen from 46 per cent to 44 per cent. This is supported by The Treasury (2008) which notes that since June 2004 the value of dwelling assets has grown by less than other wealth components. The components that have increased in importance include superannuation, other property assets, net business assets and shares.

Correspondingly, loans for owner-occupied property remains the largest component of overall debts, though it has fallen in importance from 58 per cent to 54 per cent of all debts. Other property and investment loans have both become more prominent, increasing by 3 percentage points each.

One component that receives some media attention is credit card debt. While credit cards on their own are not a major component of overall debt they are seen as an early indicator of financial stress. Overall credit card debt rose by 14 per cent over the period, which is not large when you consider that the Consumer Price Index rose by nearly 6 per cent over the same period (ABS Cat. 6401.0). However the ownership rate has fallen from 61 per cent to 55 per cent over this time. The decrease in the ownership rate hides a 34 per cent increase in the contributor average.

Table 8.1 Components of household wealth, Australia, 2005–06 compared with 2003–04

Type	*Mean, 2005–06 ($ thousands)*	*Proportion of total (per cent)*	*Change from 2003–04 mean (per cent)*	*Ownership rate, 2005–06 (per cent)*	*Change from 2003–04 ownership (percentage points)*	*Contributor mean, 2005–06 ($ thousands)*	*Change from 2003–04 contributor mean (per cent)*
Assets							
Owner-occupied property	286.1	44	15	69	–1	412.7	16
Other property assets	90.7	14	28	20	1	461.4	23
Superannuation	84.5	13	33	76	3	110.8	28
Dwelling contents	50.9	8	7	100	0	50.9	7
Net business assets	59.6	9	55	11	0	558.7	54
Interest earning assets	25.7	4	17	93	25*	27.6	–14*
Shares and trusts	36.0	5	31	30	–4	119.6	48
Vehicles	19.4	3	13	89	3	21.9	12
Total assets	655.3	100	22	100	0	655.3	22
Debts							
Owner-occupied property	49.9	54	25	32	–1	154.0	26
Other property	29.2	32	47	12	2	253.1	33
Study loans	1.5	2	23	12	1	12.5	13
Credit cards	2.2	2	14	55	–6	4.2	34
Vehicle loans	2.8	3	5	17	–1	17.1	14
Investment loans	5.1	6	113	3	1	171.6	68
Total debts	92.5	100	33	72	–3	128.2	39
Selected net assets							
Owner-occupied property	236.1	42	13	69	–1	341.1	14
Other property	61.5	11	21	20	1	313.4	16
Vehicles	16.6	3	14	89	1	18.7	13
Net worth 562.9	100	20	100	0	562.9	20	

Notes *2003–04 question relating to accounts appears to have excluded those who maintained bank accounts for transaction purposes, so the 2003–04 estimates of average bank account holdings is probably biased upwards while the ownership rate is smaller than expected. The 2005–06 question was reworded and appears to correct this problem.

Source: BITRE analysis of ABS SIH 2003–04 and 2005–06 data.

The overall level of indebtedness of Australian households has increased over the period, with the debt-to-asset ratio increasing from 12.9 per cent to 14.1 per cent.

Business assets have also seen strong growth. The number of people holding business assets has not changed, but the average holdings have increased by 55 per cent. As business assets are only recorded net of debts we are not able to tell if it is assets that have increased per se, or whether it is debts that have decreased. Net business assets show a clear spatial difference in growth. The capital cities, especially Sydney and Melbourne, have been behind the strong growth with an overall doubling of business asset holdings. Brisbane is a major exception, with the rest of Queensland driving most of the growth in that state. The growth in net business assets is entirely due to incorporated businesses, with the value of unincorporated businesses declining slightly over the period. The strong growth in the value of incorporated businesses is not surprising as the all ordinaries index monthly average rose by more than 1400 points between June 2004 and June 2006. This compares to a rise of 250 points over the previous two years (Wren Investment Advisers 2008).

Superannuation assets have grown quite rapidly as have share and trust assets. The observed growth reflects the increasing value of these financial assets due to stock market gains over the period. The number of households holding superannuation, shares and trusts has remained fairly stable. There was also very strong growth in the value of loans to finance non-property investment, albeit from a low base.

Change in the national wealth distribution

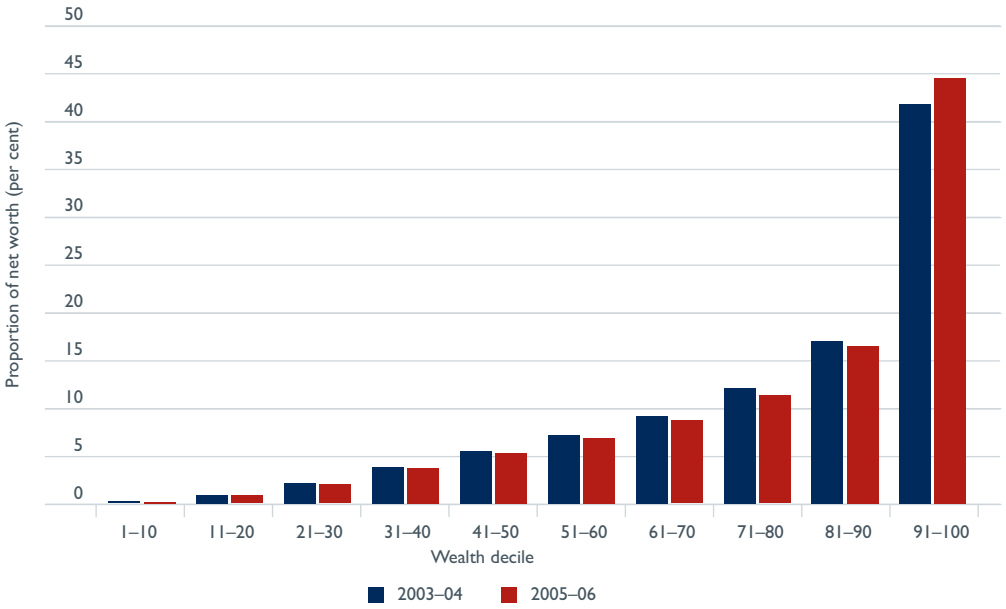
There have been some changes in the distribution of wealth holdings over the 2003–04 to 2005–06 period. In general, the most growth is seen in the top decile of all households, with the other deciles either remaining stable or experiencing slight falls relative to 2003–04. Figure 8.1 illustrates the distribution of wealth by decile for both years. In 2003–04 the top 10 per cent of households owned 42 per cent of wealth. By 2005–06 this group held 45 per cent of all wealth.

Many of the other wealth components show a similar trend. For example, earlier in the chapter it was observed that while average credit card debt had increased, the ownership rate of the debt had fallen. This implies that the increase in credit card debt is not even. Figure 8.2 supports this view. The households in the third and fourth deciles and the top decile have seen the most growth in credit card debt. The aggregate credit card debt in the top decile has grown by 33 per cent. Therefore, the increased credit card debt is largely being born by those most able to service that debt.

Figure 8.3 reveals that the wealthiest decile has also gathered an increasing share of income between 2003–04 and 2005–06. Households in the lowest wealth deciles have maintained their income shares, but deciles five through nine captured a lower proportion of income in 2005–06.

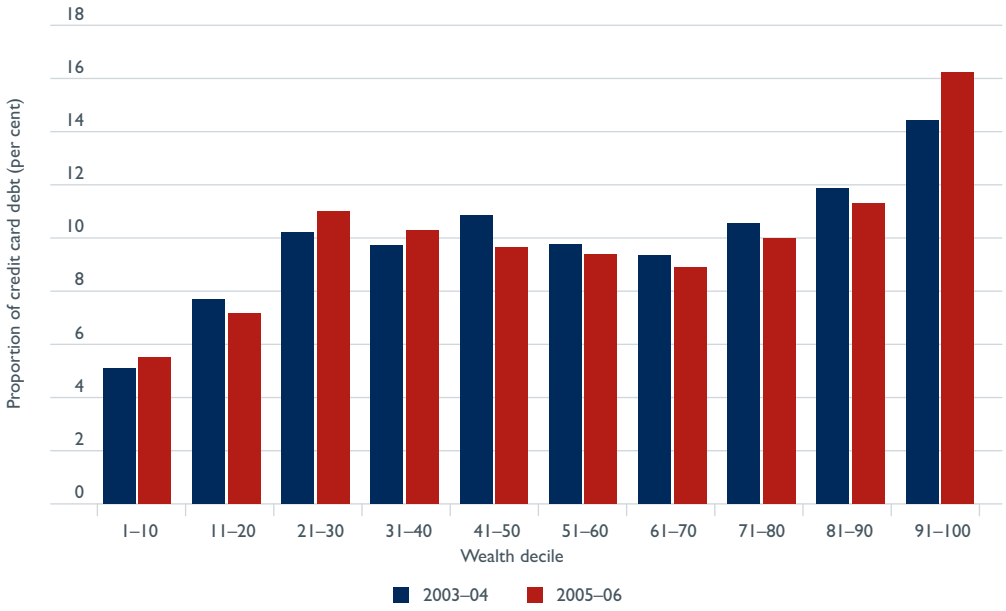
Another way to investigate the distribution of wealth is through the use of Gini coefficients (see Box 4.1 on page 56). Nationally, the Gini coefficient increased slightly from 0.62 to 0.64 between 2003–04 and 2005–06, suggesting wealth became somewhat less equally distributed within this short time period. However, as noted in Chapter 2, there does not appear to have been any long term trend in wealth inequality between 1986 and 2005–06.

Figure 8.1 Distribution of household wealth, Australia, 2003–04 and 2005–06



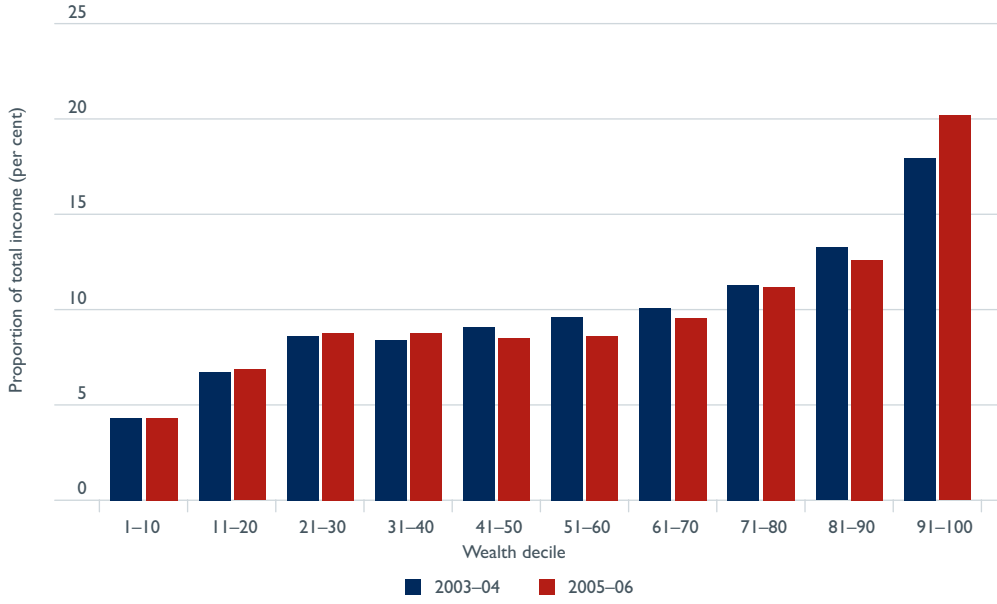
Source: BITRE analysis of ABS SIH 2003−04 and 2005–06 data.

Figure 8.2 Distribution of credit card debt by wealth decile, Australia, 2003–04 and 2005–06



Source: BITRE analysis of ABS SIH 2003−04 and 2005–06 data.

Figure 8.3 Distribution of income by wealth decile, Australia, 2003–04 and 2005–06



Source: BITRE analysis of ABS SIH 2003–04 and 2005–06 data.

Growth for aggregate regions

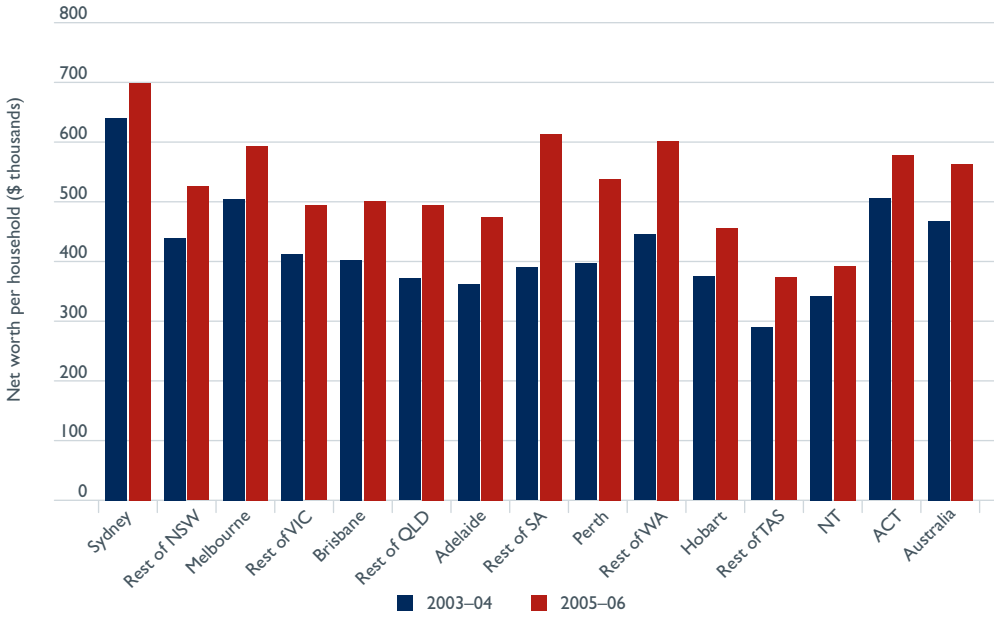
The growth in wealth between 2003–04 and 2005–06 has not been even. This section disaggregates the SIH estimates for the 14 capital city and state balance categories. Since the SIH does not have any geographic coding beyond state, capital city and state balance, urban centre size and remoteness, we are unable to conduct our analysis at a small area scale.

Figure 8.4 illustrates growth in net worth per household between 2003–04 and 2005–06. Sydney is the region with the highest average wealth, but experienced the slowest growth in wealth over this period (9 per cent). Regional SA experienced the strongest growth (58 per cent), followed by Perth (36 per cent) and regional WA (35 per cent).[45] In all states but WA, the capital city experienced slower growth in wealth than the rest of the state.

Additional investigation reveals that inner regional areas of Australia experienced stronger growth in wealth (32 per cent) than the major cities or outer regional, remote and very remote Australia (both 18 per cent). Furthermore, it was rural areas that recorded the strongest growth in wealth (33 per cent), rather than major urban or other urban areas (12 and 24 per cent respectively).

45. Between 2003–04 and 2005–06, for regional SA and regional WA, the SIH sample size declined and the RSE's more than doubled to exceed 15 per cent in 2005–06. The 2005–06 estimates for these two regions, and the implied growth rates, should therefore be treated with some caution.

Figure 8.4 Net worth per household, capital cities and state balances, 2003–04 and 2005–06



	Sydney	Rest of NSW	Melbourne	Rest of VIC	Brisbane	Rest of QLD	Adelaide	Rest of SA
Growth in wealth (per cent)	9	20	17	20	25	33	31	58

	Perth	Rest of WA	Hobart	Rest of TAS	NT	ACT	Australia
Growth in wealth (per cent)	36	35	21	29	15	14	20

Note: The percentage figures in the chart represent the growth rate of net worth per household between 2003–04 and 2005–06 for each capital city and state balance.

Source: BITRE analysis of ABS SIH 2003–04 and 2005–06 data.

The main cause of the slow growth in wealth in Sydney was declines in the value of owner-occupied and other property asset holdings. Property debts grew quite strongly in Sydney over this period, and considerably outpaced growth in property assets. The main contributors to the rapid growth in wealth in regional SA were increased net holdings of other property assets, business assets and shares and trusts.

Some of the main spatial variations in growth are summarised below for the key wealth components:

- Liquid asset holdings grew by more than 60 per cent in Brisbane, Hobart and the NT, and by only 8 per cent in regional Queensland.
- Superannuation assets grew particularly strongly in regional WA (59 per cent) and the NT (66 per cent), which may be linked to growth in mining employment. Adelaide and regional Victoria experienced the slowest growth in superannuation assets.
- The value of dwelling contents shrunk in regional SA and WA, but grew strongly in Hobart.
- The net value of owner-occupied property assets rose by 74 per cent in regional WA, and growth also exceeded 30 per cent in regional Victoria, regional Queensland,

Perth, Hobart and regional Tasmania. The value of owner-occupied property assets declined by 4 per cent for Sydney.

- The net value of other property assets declined for Sydney, Brisbane and regional Victoria. It grew extremely rapidly for regional SA, regional Queensland and Perth.

The debt-to-asset ratio increased substantially for households in the ACT (4.0 percentage points), Sydney (2.8 percentage points) and regional Tasmania (2.6 percentage points), but households from regional SA and the NT reduced their indebtedness, by 3.2 and 2.7 percentage points, respectively.

Nationally, the representation of millionaires increased from 10 per cent of households in 2003–04 to 13 per cent in 2005–06. This figure does not adjust for inflation over the period. The number of households with wealth exceeding $1 million dollars grew most strongly in Perth (from 8 to 14 per cent of households) and the NT (5 to 13 per cent), while it remained fairly constant for Sydney (17 to 18 per cent).

Households with less than $50 000 of wealth became slightly less prominent, declining from 17 to 16 per cent of Australian households over the period. Between 2003–04 and 2005–06, low wealth households became much less prominent in Brisbane (22 to 17 per cent) and the ACT (18 to 13 per cent). However, households with less than $50 000 of wealth became more prominent in regional WA (15 to 18 per cent).

Nationally, the Gini coefficient increased between 2003–04 and 2005–06, meaning there is a greater degree of wealth inequality than previously. Table 8.2 outlines the Gini coefficients for each capital city and state balance. Sydney, Melbourne and the state balances of Queensland, SA and WA recorded the largest increases in the Gini coefficient. The state balances of SA and WA both now have Gini coefficients higher than the national coefficient, indicating that there is a large disparity in household wealth within these areas.

Table 8.2 Gini coefficient for household wealth, capital cities and state balances, 2003–04 and 2005–06

Capital city or state balance	*2003–04 Gini coefficient*	*2005–06 Gini coefficient*
Sydney	0.58	0.64
Rest of NSW	0.55	0.57
Melbourne	0.56	0.61
Rest of VIC	0.57	0.56
Brisbane	0.57	0.56
Rest of QLD	0.57	0.61
Adelaide	0.52	0.60
Rest of SA	0.57	0.69
Perth	0.56	0.58
Rest of WA	0.61	0.65
Hobart	0.52	0.51
Rest of TAS	0.53	0.51
NT	0.63	0.62
ACT	0.52	0.52
Australia	0.62	0.64

Source: BITRE analysis of ABS SIH 2003–04 and 2005–06 data.

Growth in owner-occupied property

Net owner-occupied property assets

For Australians, the home is by far the most important component of wealth, with net owner-occupied property assets accounting for 45 per cent of net worth in 2003–04.

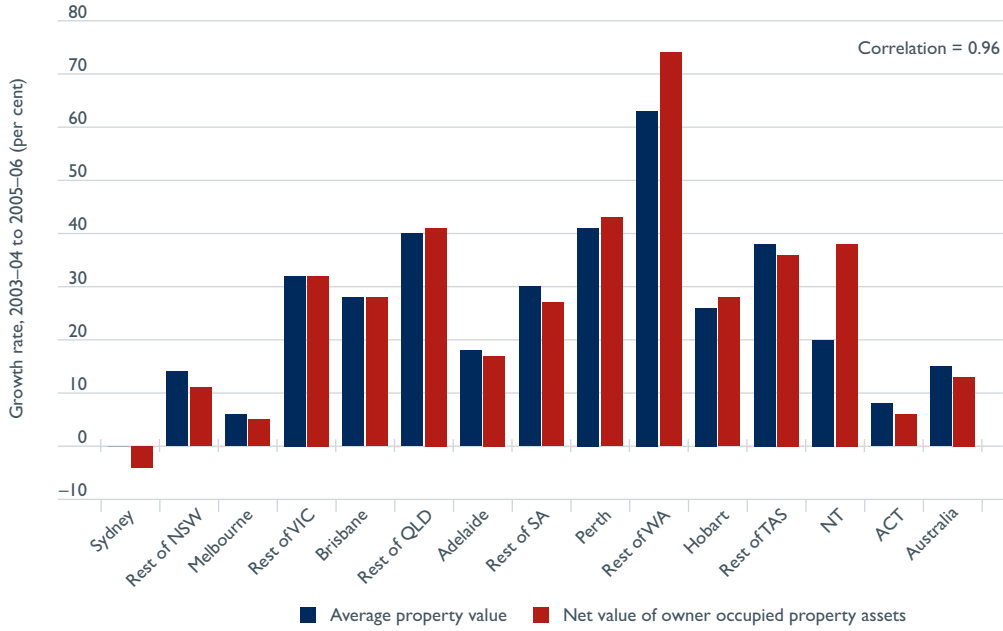
Changes in the value of owner-occupied property assets—whether due to changes in ownership, house prices or mortgages—are also an important driver of changes in net worth. Between 2003–04 and 2005–06, the increase in the net value of owner-occupied property assets was the single largest contributor to the increased net worth of Australian households. It accounted for 28 per cent of the growth in net worth per household, while 22 per cent of growth was attributable to increased superannuation assets and 22 per cent was attributable to increased net business assets.

Between 2003–04 and 2005–06, the increased net value of owner-occupied property assets was the dominant source of growth in wealth for Brisbane, regional Queensland, regional Victoria, Perth, regional WA, Hobart, regional Tasmania and the NT. However, for Melbourne, Sydney and the ACT, superannuation assets and net business assets both made a larger contribution to the change in net worth. This is reflected in the correlation between the growth rates of net worth and net owner-occupied property assets across the 14 regions, which was positive and significant, but not overly strong (0.49). Growth in net worth was more closely linked to the growth rate of other property assets (0.86) and shares and trusts (0.71). Thus, regional changes in the value of owner-occupied property assets are certainly an important influence on net worth, but will not always be the dominant influence for a region. There are also some indications that the home is becoming less important to net worth (see Table 8.1).

Regional changes in the net value of owner-occupied property are largely driven by changes in property values, rather than changes in the home ownership rate or mortgages. Figure 8.5 illustrates the very close link between the two over the 2003–04 to 2005–06 period. The correlation coefficient is 0.96 across the 14 capital city and state balance regions. A similarly strong relationship (correlation = 0.86) was found using SIH data for the 1994–95 to 2003–04 period.

In the absence of small area time series data on net worth or net owner-occupied property assets, it follows that small area property price data can potentially provide some useful insights about recent spatial trends in wealth. The next subsection summarises changes in property values between 2003–04 and 2005–06, based on APM data. It focuses on a single component of net worth, albeit a very important one.

Figure 8.5 Growth in property values and net owner-occupied property assets, capital cities and state balances, 2003–04 to 2005–06



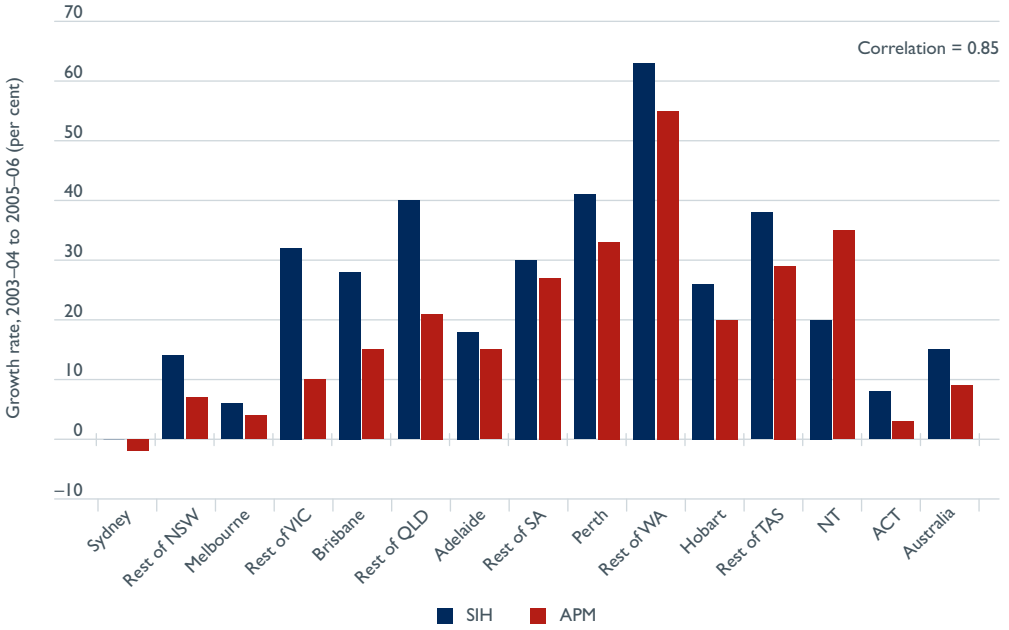
Source: BITRE analysis of ABS SIH 2003–04 and 2005–06 data.

Property price growth

The analysis in this section is based on APM data on house and unit sales between 2003–04 and 2005–06. Chapter 3 provides further information about this data source.

Figure 8.6 compares the estimated change in the average property value between 2003–04 and 2005–06 across two data sources—the SIH and APM. The two data sources are broadly consistent with a very strong overall correlation of 0.85. Both data sources indicate that Sydney experienced the lowest growth and that regional WA experienced the most rapid growth. It is notable that the SIH estimate of growth in property values exceeds the APM data for all regions other than the NT. The SIH data is based on household's perceptions about the value of their house, while the APM data is more objectively based on the average value of actual property sales in the region.

Figure 8.6 Growth in average property values, capital cities and state balances, 2003–04 to 2005–06



Source: BITRE analysis of APM and ABS SIH data for 2003–04 and 2005–06.

According to APM data, property values have increased by 9 per cent at the national scale. However, there has been considerable variation in the rate of growth or decline across Australia's regions. Table 8.3 highlights the regions which have experienced the most rapid growth and decline in average property values. There were only eight SLAs which experienced a fall in property values of more than 10 per cent over the period. In contrast, property prices increased by more than 10 per cent in 64 per cent of SLAs for which reliable measures of property price growth could be constructed.

Property values declined by 2 per cent in Sydney over this period, and not surprisingly, Sydney suburbs are prominent in the list of SLAs with the greatest decline in property values. Numerous southern and western suburbs of Sydney feature, including Sutherland shire, Kogarah, Hurstville, Rockdale and Parramatta.

The 20 SLAs with the most rapid increases in property values are all located within either WA or Queensland. The coal mining SLAs of central Queensland are prominent (e.g. Broadsound, Belyando, Duaringa, Peak Downs), while several WA mining based SLAs also experienced very rapid price growth (i.e. Ashburton, Collie). Many of the WA SLAs experiencing very rapid price growth are clustered around the major regional centre of Bunbury in the state's south west (e.g. Capel, Collie, Dardanup, Donnybrook-Ballingup).

Table 8.3 Growth in average property values between 2003–04 and 2005–06, top and bottom 20 SLAs

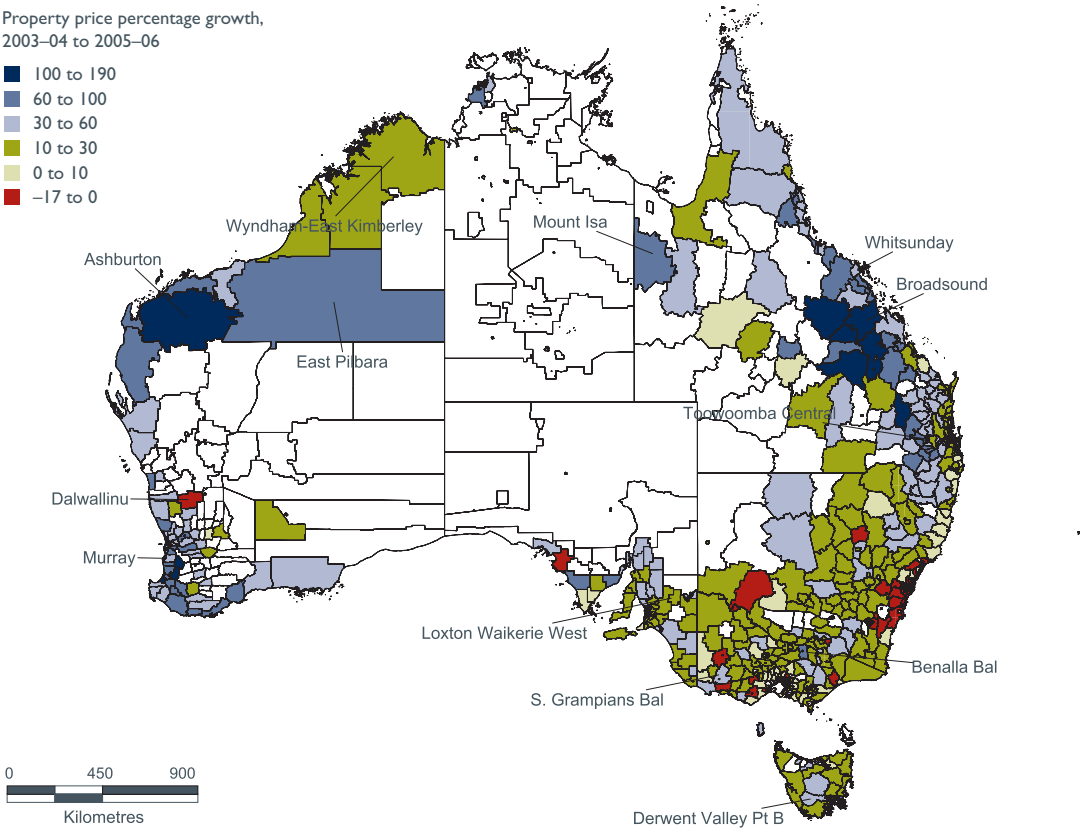
Greatest decline in property values			*Greatest growth in property values*		
SLA name	*State or territory*	*Decline (per cent)*	*SLA name*	*State or territory*	*Growth (per cent)*
Moyne North West	VIC	–17	Broadsound	QLD	189
Pallara-Heathwood-Larapinta	QLD	–14	Duaringa	QLD	143
Barton	ACT	–14	Ashburton*	WA	129
Sutherland Shire West	NSW	–12	Peak Downs	QLD	123
Pearce	ACT	–11	Belyando	QLD	118
Kingsholme-Upper Coomera	QLD	–11	Boddington	WA	116
Pimpama-Coomera	QLD	–11	Bauhinia	QLD	110
Kogarah	NSW	–11	Chinchilla	QLD	108
Fig Tree Pocket	QLD	–10	Capel Part B	WA	104
Sutherland Shire East	NSW	–9	Collie	WA	100
Manly	QLD	–8	Dardanup Part A	WA	98
Streaky Bay	SA	–8	Capel Part A	WA	96
Hurstville	NSW	–8	Donnybrook-Ballingup	WA	94
Dalwallinu	WA	–7	Wambo	QLD	93
Parramatta Inner	NSW	–7	Ipswich South West	QLD	92
Parramatta North East	NSW	–7	Banana	QLD	91
Parramatta South	NSW	–7	Irwin	WA	86
Parramatta North West	NSW	–7	Warwick West	QLD	85
Holroyd	NSW	–7	Northam	WA	85
Rockdale	NSW	–7	Mirani	QLD	84

Notes: Based on 2006 ASGC boundaries. Excludes SLAs with fewer than 10 property transactions in either year, which leaves 1186 SLAs.
* BITRE did not produce wealth estimates for this very remote SLA.

Source: BITRE analysis based on APM data.

Figure 8.7 maps the growth of property prices between 2003–04 and 2005–06 at a national scale. Clusters of regions experiencing high growth in property values are evident in the Pilbara, south-west WA, Queensland's Bowen Basin and to the west of Toowoomba. Regions experiencing declines in property values stretch along the NSW coastline between Port Macquarie and the Shoalhaven, and inland to parts of Canberra. A number of rural SLAs in western Victoria also experienced declining property values over the period.

Figure 8.7 Growth in average property values, Australia, 2003–04 to 2005–06



Note: Excludes SLAs with fewer than 10 property transactions in either year.
Source: BITRE analysis of APM data based on ASGC 2006 boundaries.

Figure 8.8 focuses in on Sydney. Between 2003–04 and 2005–06 property values declined in the great majority of Sydney SLAs. However, some SLAs in the inner city and the northern suburbs did experience modest growth, as did Gosford and Hawkesbury.

Figure 8.9 focuses on the south-west of WA. Very strong growth in property values was recorded in coastal SLAs and in some inland SLAs lying between Bunbury and Perth (i.e. Collie, Boddington). Augusta-Margaret River experienced lower, but still strong, growth in property values over the period—its major spurt in growth occurred in the year ended June 2004. Chapter 11 includes a case study of the Augusta-Margaret River SLA.

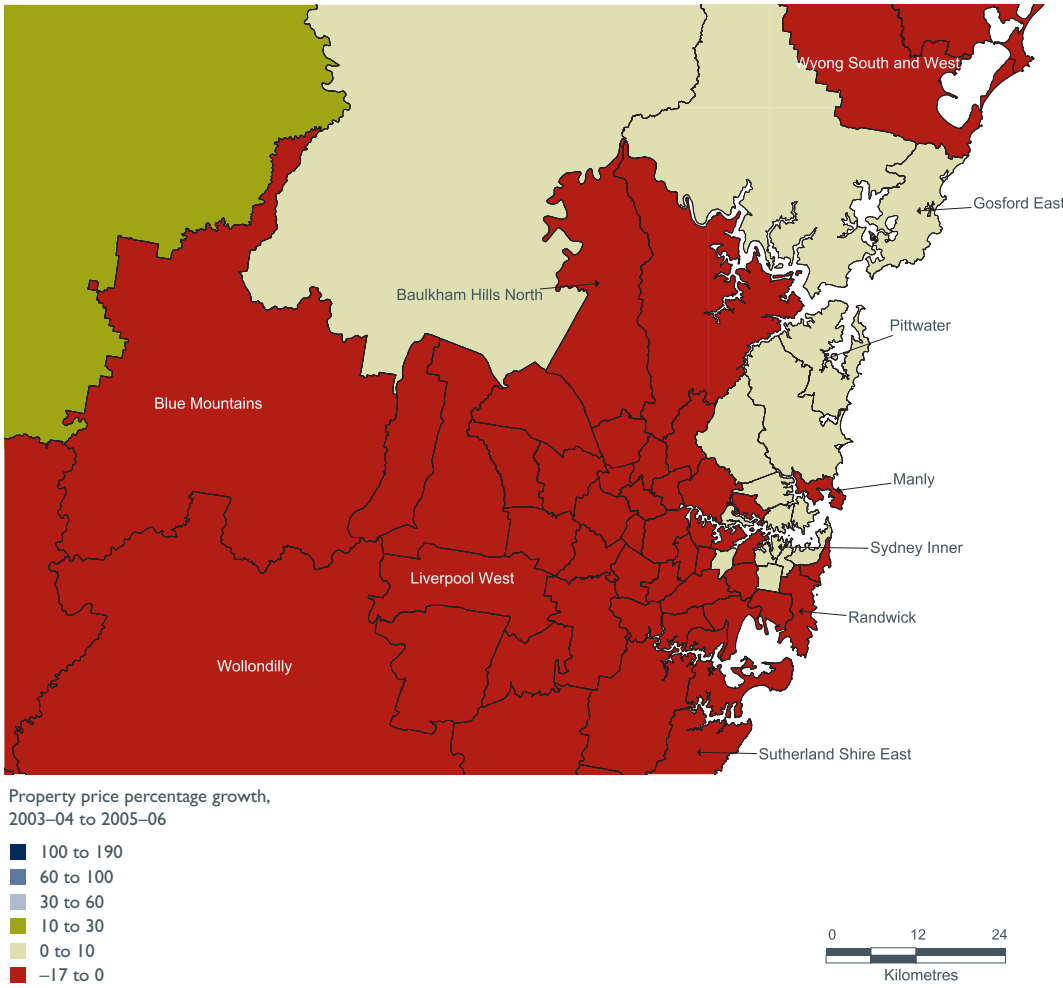
Based on recent increases in property values, BITRE's 2003–04 estimates of net worth per household are likely to:

- overstate the current relative position of SLAs in the vicinity of Sydney, and particularly the southern and western suburbs of Sydney.
- understate the current wealth of many mining SLAs, particularly those in Queensland's Bowen Basin and WA's Pilbara, although the effect of increased

prices will be dampened by the low rates of home ownership in most mining regions.

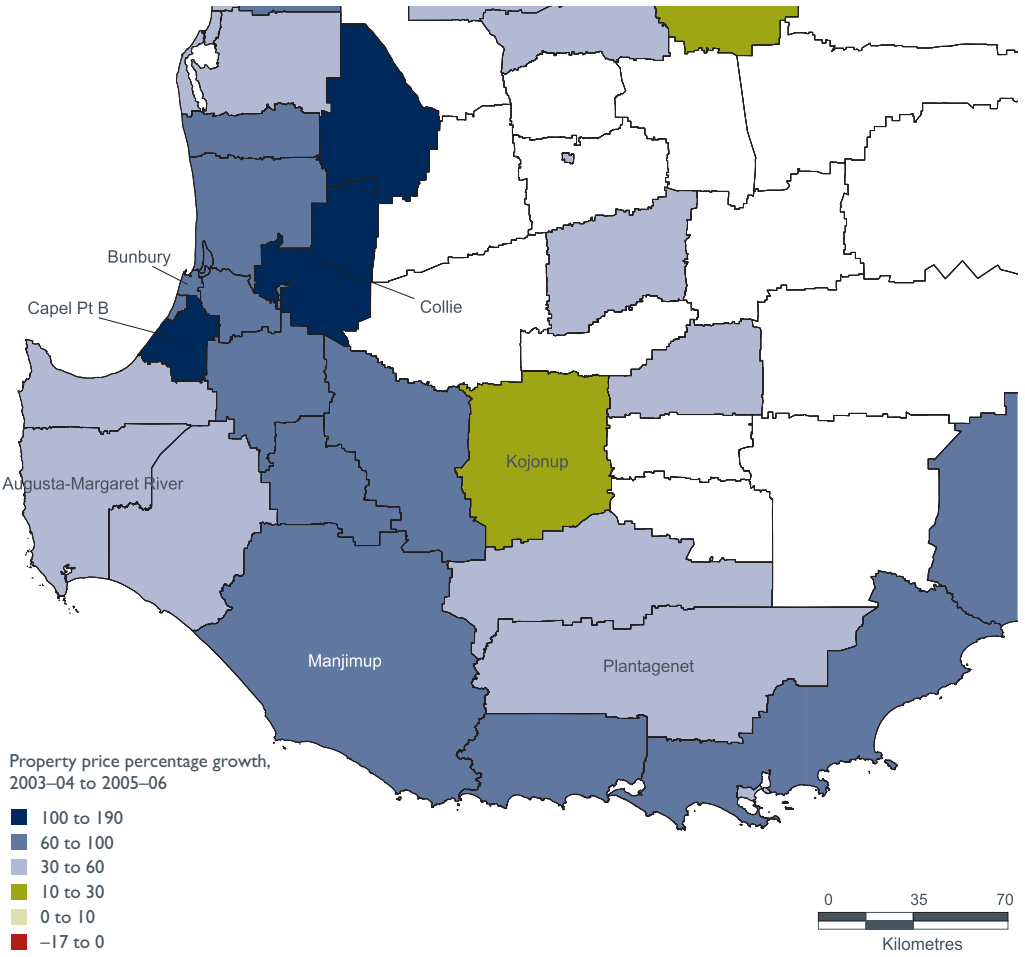
- understate current wealth in SLAs in the vicinity of Bunbury, as well as most coastal regions within the south west of WA.

Figure 8.8 Growth in average property values, Sydney, 2003–04 to 2005–06



Source: BITRE analysis of APM data based on ASGC 2006 boundaries.

Figure 8.9 Growth in average property values, south-west Western Australia, 2003–04 to 2005–06



Note: Excludes SLAs with fewer than 10 property transactions in either year.
Source: BITRE analysis of APM data based on 2006 ASGC boundaries.

Updating the wealth estimates

Feedback from researchers and regional development practitioners on the 2003–04 *Household Wealth Database* will be used to evaluate its strengths and weaknesses and the demand for updated small area wealth estimates. In conjunction with government priorities, this feedback will determine whether BITRE updates the small area estimates of household wealth.

The recent release of the 2005–06 SIH wealth data means the small area estimates could potentially be updated to 2005–06. ABS intends to include a wealth module in the 2009–10 SIH, and on a six year cycle thereafter. Information on recent changes in household wealth is also available from the HILDA survey, which included a wealth module in its 2002 and 2006 waves.

The small area data sources which were critical to BITRE's household wealth estimates—namely APM property price data, ATO *Taxation Statistics* and the ABS *Census of Population and Housing*—are all available for 2005–06 and could potentially be used to produce updated small area estimates of wealth.

However, BITRE's comparison of the SIH wealth estimates for 2003–04 and 2005–06, raised some concerns about the quality of the capital city and state balance estimates. Nationally, the SIH sample was 12 per cent smaller in 2005–06 and the RSE for net worth per household was considerably higher at 3.1 per cent, compared to 1.5 per cent in 2003–04. The reduction in SIH sample size was not uniformly distributed. The regions experiencing the largest reduction in sample size were the NT (61 per cent reduction), Rest of WA (32 per cent reduction) and Melbourne (26 per cent reduction), Rest of Queensland (22 per cent reduction), Rest of SA (20 per cent reduction) and Hobart (20 per cent reduction). The reduced sample sizes have impacted negatively on reliability. Of most concern are the much higher RSEs for Rest of SA (20 per cent) and Rest of WA (18 per cent). The Sydney and Melbourne RSEs more than doubled, but remained just below the 10 per cent threshold.

The RSEs of the 2005–06 SIH wealth estimates for Rest of SA and Rest of WA mean the net worth per household estimates for these regions may not be suitable for use as benchmarks. Thus, if BITRE is to produce updated small area estimates of wealth for 2005–06, consideration may need to be given to alternate approaches which are less reliant on the SIH capital city and state balance estimates. A simple replication of the methodology applied by BITRE in this study would be expected to produce lower quality estimates for 2005–06, particularly for small areas within regional SA and WA.

Summary

This study is focused on presenting a snapshot of spatial differences in wealth in 2003–04, but there have been many developments in the economy, property market and share market that have impacted on household wealth over the last few years. This chapter has identified the major changes that have occurred in wealth between 2003–04 and 2005–06 and provided some insight into potential impacts on household wealth at a regional scale.

Key messages

Between 2003–04 and 2005–06, liabilities grew more rapidly than assets, and the value of outstanding mortgages grew more rapidly than the value of owner-occupied property assets.

Net business assets grew particularly strongly over the period, while superannuation assets, shares and trusts and investment property also showed above average rates of growth.

The wealthiest 10 per cent of households increased their share of wealth from 42 per cent in 2003–04 to 45 per cent in 2005–06.

For all states other than WA, regional areas experienced higher growth in wealth than capital cities.

Growth in wealth was lowest for Sydney (9 per cent) and highest for regional SA (58 per cent), Perth (36 per cent) and regional WA (35 per cent).

The net value of owner-occupied property was the most important driver of growth for the majority of the capital city and state balance regions. Changing property values have consistently been the dominant driver of changes in the net value of owner-occupied property.

Between 2003–04 and 2005–06, property values declined in much of Sydney's south and west. Growth in property values was extremely strong in Queensland's mining areas and in the vicinity of Bunbury WA.

BITRE will consider feedback from users in deciding whether to update the 2003–04 small area estimates of household wealth.

Chapter 9 Wealth, household size and age

Chapters 6 and 7 described spatial differences in net worth and its components, highlighting regions with particularly high or low wealth. However, low wealth in itself may not be cause for concern.

Low average wealth in a region may simply reflect a particularly small average household size. Therefore, it is desirable that regional differences in household size be adjusted for before making inferences about comparative regional wellbeing.

Alternatively, low average wealth in a region may occur because of its particularly young population. In this case, regional wealth would be expected to grow over time as residents age and build up their asset base. A region which has low wealth combined with an older age structure is likely to be of greater concern. Therefore, it is desirable that regional differences in age structure be taken into account when using wealth data to compare the relative wellbeing of different regions.

It is important to know not only whether a region has high or low wealth, but also the principal factors underlying that result. This chapter links BITRE's wealth estimates with information on household size and age to provide a more informative picture of wealth differences across Australia's regions.

Household size

A 'per household' measure of net worth has been used in this study, rather than a 'per person' measure. Ownership of key assets, such as property and bank accounts, is commonly shared amongst household members, and to reflect this, wealth information has typically been collected and published on a household basis.

Regional variations in household size are relevant when using wealth data to compare regional economic wellbeing. For example, the Manningham East and Kew SLAs in Melbourne's eastern suburbs have very similar net worth per household ($905 600 and $900 100 respectively). However, the average size of households[46] is considerably larger in Manningham East (3.0 persons) than Kew (2.2). Consequently, the average resident of Manningham East is less wealthy than the average Kew resident.

Amongst the in-scope SLAs with more than 500 households, the average household size was highest for Brisbane's Upper Kedron SLA (3.2 persons) and lowest for Inner City Darwin (1.2 persons).[47] Inner city SLAs, such as Fortitude Valley and Inner Sydney, contain relatively small households. Recently developed outer suburbs, such as Craigieburn and Baulkham Hills, tend to contain relatively large households.

46. Average household size is measured as the average number of usual residents per estimated resident household in 2001.
47. SLAs with substantial indigenous populations also tend to have a high average household size. However, discrete indigenous communities and very remote areas lie outside the scope of this study.

This has implications when interpreting the wealth estimates as while Baulkham Hills has much higher net worth per household than Inner Sydney ($812 200 and $490 200 respectively), the situation is reversed when wealth per person is assessed ($278 400 versus $397 600).

Household size and composition influence the level of household wealth. Couple households have a greater capacity to accumulate wealth than single person households. Couples also need more financial resources than single people in order to achieve the same standard of living, but two adults living together can share many living costs and so need less than twice the resources of a single person household (Saunders 2002). The standard of living associated with a given level of wealth or income therefore depends on household size and composition.

Equivalence scales are commonly used to adjust measures of household income, wealth or expenditure to reflect the relative needs of different types of household. There are a number of ways to *equivalise* resources (Atkinson et al 1995) and there is no standard approach to accounting for differing needs in the wealth literature (Sierminska and Smeeding 2005).

To provide a consistent picture across regions with different average household sizes, BITRE has attempted to control for differing needs using the 'modified OECD' method. This is one of the more commonly used equivalence scales, and has been used by ABS (2006b, 2007b) to equivalise household income and net worth. The modified OECD method allocates 1.0 points to the first adult and 0.5 points for every additional adult. Children aged under 15 are each allocated 0.3 points. The total number of points is the equivalising factor for the household or region. The modified OECD scale is a one period equivalence scale based on the number of people in the current household—it does not consider future generations (Sierminska and Smeeding 2005).

As there is no single generally accepted equivalence scale, and results may be sensitive to the choice of scale, the results presented below should only be considered indicative. Users interested in undertaking more in-depth analysis are directed to the SLA information on average household size, number of adults and number of children in BITRE's *Household Wealth Database*. It should also be noted that for some rapidly changing SLAs, the 2001 household size data may not be representative of household characteristics in 2003–04.

Table 9.1 presents the 20 SLAs with the highest average equivalised wealth in 2003–04, while Table 9.2 presents the 20 SLAs with the lowest average equivalised wealth. From Tables 9.1 and 9.2 it can be seen that the wealthiest regions tend to contain smaller than average households while the least wealthy regions generally contain larger than average households. The spatial distribution of equivalised wealth therefore shows slightly more variation than that of unequivalised wealth.

A comparison of Table 9.1 to the earlier unequivalised top 20 (Table 6.2) reveals only three new entrants: Mosman Park in Perth and Yarralumla and Deakin in the ACT. Strathfield (Sydney), Fig Tree Pocket (Brisbane) and Manningham East (Melbourne) drop out of the top 20 when wealth is equivalised. While there is some reordering, equivalising wealth has a relatively minor impact on the picture of Australia's wealthiest regions. Once differences in household size are controlled for, it is clear that the

wealthiest SLAs are overwhelmingly located in Australia's capital cities, particularly Sydney, and to a lesser extent, Melbourne, Perth and Canberra.

Table 9.1 Equivalised wealth, top 20 regions, 2003–04

SLA	State or territory	Equivalised wealth 2003–04 ($ thousands)	Number of households 2003–04	Average persons 15+ 2001	Average persons <15 2001	Average household size 2001	Rank based on net worth per household (unequivalised)
1. Peppermint Grove	WA	1 220	563	1.9	0.5	2.4	1
2. Woollahra	NSW	1 043	24 191	1.5	0.2	1.8	3
3. Mosman	NSW	981	12 209	1.6	0.3	2.0	4
4. Hunter's Hill	NSW	971	4 654	1.9	0.5	2.3	2
5. Ku-ring-gai	NSW	789	35 201	2.1	0.6	2.7	5
6. Bayside: Brighton	VIC	778	14 079	1.8	0.4	2.2	6
7. Pittwater	NSW	752	21 060	1.9	0.5	2.3	7
8. Manly	NSW	720	16 455	1.6	0.3	2.0	8
9. Cottesloe	WA	694	3 290	1.7	0.3	2.0	12
10. Lake Grace	WA	693	653	1.5	0.5	2.0	15
11. Lane Cove	NSW	652	12 660	1.8	0.4	2.2	14
12. Willoughby	NSW	647	24 473	1.9	0.4	2.3	10
13. Nedlands	WA	638	7 774	1.9	0.5	2.4	9
14. Stonnington: Malvern	VIC	638	18 558	1.8	0.4	2.2	16
15. Red Hill	ACT	628	1 166	1.7	0.5	2.2	17
16. Mosman Park	WA	626	3 671	1.6	0.3	1.9	27
17. Yarralumla	ACT	615	1 277	1.7	0.4	2.0	24
18. Chelmer	QLD	614	964	2.0	0.5	2.4	11
19. Boroondara: Camberwell North	VIC	606	16 046	2.0	0.5	2.4	13
20. Deakin	ACT	598	1 090	1.7	0.3	2.0	29
Australia		294	7 735 838	1.8	0.5	2.3	nr

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, 2001 ABS' estimated resident households and 2001 ABS' *Census of Population and Housing* data on usual residents of occupied private dwellings, disaggregated by age.

Similarly, a comparison of Table 9.2 to the earlier unequivalised bottom 20 (Table 6.3) reveals only three new entrants: Kelso in Townsville and City Remainder and Durack in Darwin. Whyalla (SA), Garbutt (Townsville) and George Town Part A (Tasmania) no longer feature in the bottom 20 once wealth is equivalised. Equivalising wealth has led to some reordering of the bottom 20. For example, while Mount Morgan has the lowest net worth per household, it has the seventh lowest equivalised wealth.

Equivalising wealth has slightly altered the picture of Australia's least wealthy regions, with several non-metropolitan SLAs (i.e. George Town Part A, Mount Morgan and Whyalla) improving their rankings. Once differences in household size are controlled for, it is clear that the least wealthy SLAs are concentrated in Adelaide and Brisbane's outer suburbs, and in Darwin.

Further analysis revealed that equivalising wealth does not alter the conclusion that wealth is consistently much lower in regional centres than in their surrounding

rural SLAs. When wealth is equivalised, all of the regional centres listed in Table 6.6 continue to perform more poorly than their surrounding SLAs.

Table 9.2 Equivalised wealth, bottom 20 regions, 2003–04

SLA	State or territory	Equivalised wealth 2003–04 ($ thousands)	Number of households 2003–04	Average persons 15+ 2001	Average persons <15 2001	Average household size 2001	Rank based on net worth per household (unequivalised)
1135. Playford West Central	SA	99	4 892	1.7	0.7	2.4	1134
1134. Woodridge	QLD	103	7 226	1.8	0.6	2.3	1132
1133. Kingston	QLD	104	4 471	1.9	0.7	2.7	1131
1132. Playford: Elizabeth	SA	106	10 818	1.7	0.5	2.2	1133
1131. Wacol	QLD	108	980	1.8	0.8	2.7	1130
1130. Marsden	QLD	111	5 882	2.0	0.9	2.9	1128
1129. Mount Morgan	QLD	111	1 345	1.5	0.4	1.9	1135
1128. Inala	QLD	120	4 654	1.8	0.7	2.5	1129
1127. Palmerston Balance	NT	121	1 192	1.8	0.8	2.6	1127
1126. Vincent	QLD	122	893	1.8	0.9	2.7	1123
1125. Moulden	NT	123	1 138	1.7	1.0	2.7	1126
1124. Kelso	QLD	126	9 269	2.0	0.9	3.0	1112
1123. Brighton	TAS	127	4 692	1.9	0.8	2.6	1121
1122. Loganlea	QLD	130	2 769	1.9	0.7	2.7	1118
1121. Salisbury Inner North	SA	131	8 919	1.9	0.7	2.7	1116
1120. Durack	NT	134	1 018	1.9	1.0	2.9	1124
1119. Eagleby	QLD	135	3 418	1.8	0.7	2.4	1120
1118. City Remainder	NT	136	2 403	1.8	0.8	2.6	1114
1117. Bakewell	NT	136	1 303	1.7	0.7	2.4	1119
1116. Gray	NT	137	1 264	1.6	0.7	2.3	1122
Australia		294	7 735 838	1.8	0.5	2.3	nr

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, 2001 ABS' estimated resident households and 2001 ABS' *Census of Population and Housing* data on usual residents of occupied private dwellings, disaggregated by age.

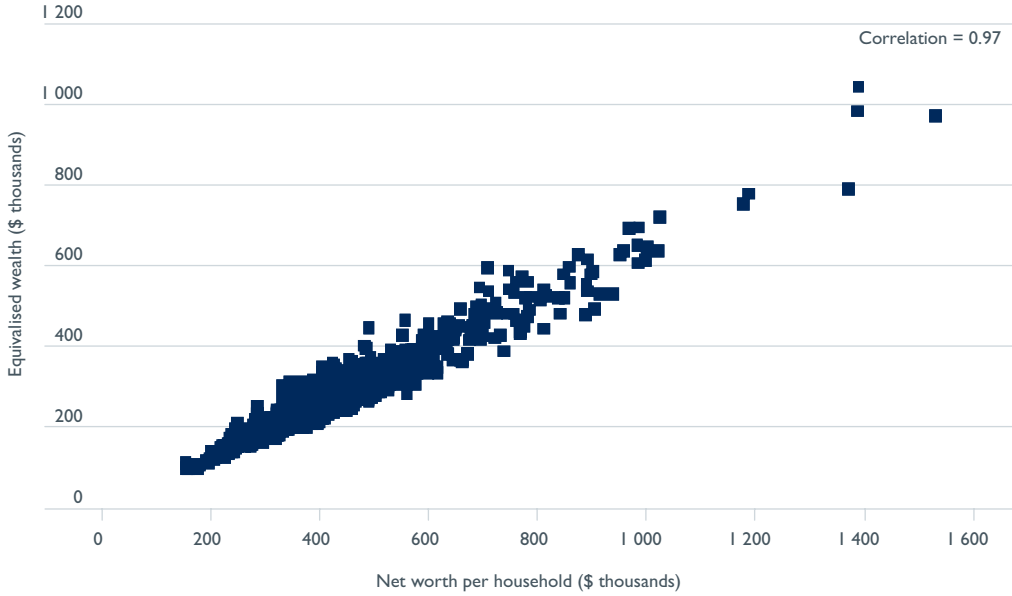
Regional variation in average household size was only capable of explaining one per cent of the variation in net worth per household across the in-scope SLAs with more than 500 households. Consequently, adjusting wealth for household size has only a very limited effect. Equivalised wealth is very highly correlated with average wealth per household, as shown in Figure 9.1.

Nevertheless, the relative position of some SLAs shifts a great deal when wealth is equivalised. Table 9.3 highlights the SLAs which experienced the most dramatic shift in rankings. Equivalising wealth serves to improve the positions of SLAs with a particularly low average household size, while SLAs with a particularly high average household size receive a poorer ranking.

The 10 SLAs with the greatest ranking improvement are all high population density areas of Australia's major cities, where most residents live in units or apartments,

rather than separate houses. The ranking improvements experienced by these 10 SLAs are all of greater magnitude than the greatest ranking drop experienced by any individual SLA (322 places). Thus, equivalising wealth has the greatest impact for high density inner suburbs. Net worth per household provides an overly negative picture of the economic wellbeing of these households, because it does not account for the fact that most of these households contain only one or two individuals.

Figure 9.1 Relationship between average wealth per household and equivalised wealth, SLAs, 2003–04



Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*.

Table 9.3 SLAs which experienced the greatest shift in rankings when wealth was equivalised, 2003–04

Improved ranking				*Worsened ranking*			
Gap	*SLA*	*Rank: Average wealth per household*	*Rank: equivalised wealth*	*Gap*	*SLA*	*Rank: Average wealth per household*	*Rank: equivalised wealth*
+489	Inner City (Darwin) NT	875	386	–322	Stretton-Karawatha QLD	161	483
+484	Inner Melbourne VIC	831	347	–317	Central Pine West QLD	393	710
+397	Phillip ACT	604	207	–312	Fairfield NSW	432	744
+393	Sydney Remainder NSW	741	348	–299	Knox South VIC	295	594
+387	Braddon ACT	790	403	–278	Bellbowrie QLD	293	571
+372	Perth Remainder WA	1024	652	–272	Ipswich North QLD	454	726
+370	Bowen Hills QLD	836	466	–268	Upper Kedron QLD	648	916
+356	Kangaroo Point QLD	676	320	–263	Brimbank–Keilor VIC	576	839
+350	South Sydney NSW	722	372	–262	Jondaryan Part A QLD	417	679
+347	Spring Hill QLD	846	499	–260	Calamvale QLD	410	670

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, 2001 ABS' estimated resident households and 2001 ABS' *Census of Population and Housing* data.

The 10 SLAs with the largest drop in their ranking all had an average household size of more than 2.8 persons—these SLAs tended to have a high proportion of young families and/or a large overseas born population (which is often associated with above average fertility rates and extended family households). Nine of the ten SLAs are located in the capital cities (six within Brisbane SD), while Jondaryan Part A is located on the western border of Toowoomba. The 10 SLAs which experienced the greatest drop in rankings do not fit a single profile, although six of the ten have a very high proportion of mortgage-holders (Upper Kedron, Ipswich North, Bellbowrie, Knox South, Central Pine West and Jondaryan Part A).

In summary, equivalising the wealth data provides a slightly altered picture of the economic wellbeing of Australia's regions. The major effect was to reveal a more positive wealth position for inner city areas, while a less positive wealth position was revealed for some outer-suburban mortgage belt areas. Equivalising wealth had a relatively minor impact on lists of the wealthiest and least wealthy regions and did not alter conclusions about the wealth gap between regional centres and their rural surrounds.

The effect of age on regional wealth

> '[S]hould we, in comparing the welfare of individuals take account only of their current circumstances or should we consider some measure of their average situations over their lifetimes?' (Laidler 1985, p. 11)

Osberg (1985) concludes that lifetime considerations should be paramount when assessing economic wellbeing, and Laidler (1985) shows that this is consistent with the economic evidence that individuals seek to maximise welfare over their lifecycle.

The amount of wealth held by a person is strongly related to that individual's age. Wealth is lowest for the 15 to 24 age group and rises gradually with age, peaking for the 55 to 64 age group, before declining slightly for the older age groups. Average wealth levels in a region will therefore be influenced by the age structure of the local population.

Table 9.4 summarises how the SLA estimates of wealth vary with median age. One feature of the table is the wide range of wealth estimates within each age category. There are some very low wealth SLAs in each of the age categories, apart from the 45 plus category. There are some very high wealth SLAs in the 30–34, 35–39, 40–44 and 45 plus age categories. However, the median figures do confirm that wealth tends to be lowest for SLAs with a median age of less than 30, and rises across the age categories.

Table 9.4 Wealth estimates by median age category, SLAs, 2003–04

Median age	*Number of SLAs*	*Net worth per household, 2003–04 ($ thousands)*		
		Minimum	*Maximum*	*Median*
Less than 30	72	157	582	299
30–34	344	160	789	375
35–39	509	158	1927	431
40–44	187	154	1370	450
45 or more	23	315	756	476

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database* and 2001 ABS' *Census of Population and Housing* place of usual residence data.

When low average wealth in a region is wholly due to a very youthful age structure, it is unlikely to be of concern to policymakers. In such a region, household wealth would be expected to increase over time as the population ages.

When wealth data is used to compare the economic wellbeing of different regions, differences in the age structure of regional populations should be taken into account. This section adjusts the equivalised wealth estimates for differences in regional age structure. The adjustment is based on the ABS' *Census of Population and Housing* estimates of the proportion of an SLA's usual resident population in various age groups in 2001.

Regression analysis is used to assess how regional differences in age structure influence regional variation in equivalised wealth. The preferred regression model is outlined in Table 9.5. Spatial differences in age structure are able to explain almost one-quarter of the regional variation in equivalised wealth.

In the regression, the 35 to 54 age category is the reference group. All other age categories have a negative, statistically significant coefficient. Thus, regions which have a very high proportion of the population aged between 35 and 54 tend to have the highest equivalised wealth. Regions with a very high proportion of children have particularly low equivalised wealth, other things equal.

Table 9.5 Age as an explanator of spatial variation in equivalised wealth

Explanatory variables	*Parameter estimate*
Constant	1339*
Population share aged 0–14	–2175*
Population share aged 15–24	–1390*
Population share aged 25–34	–1308*
Population share aged 55–64	–1316*
Population share aged 65+	–770*
Adjusted R-squared	24.1 per cent

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Equivalised wealth is expressed in thousands of dollars. All age data relates to 2001. The 35–44 age category was omitted to avoid perfect multicollinearity. The 45–54 age category variable was not statistically significant when included in the model, so was omitted.

* = significant at 1 per cent level.

Source: BITRE analysis based on BITRE *Household Wealth Database* and 2001 ABS' *Census of Population and Housing* data.

The residuals from this equation can be interpreted as representing the amount of equivalised wealth that could not be explained by the regional age structure. They can therefore be used to provide an indicative ranking of regions in terms of age-adjusted equivalised wealth. This ranking is based on an estimation of the average relationship across all regions, and may not be representative of the circumstances of any specific region, so should be interpreted with caution. Table 9.6 lists the 20 SLAs which have the highest and lowest amounts of equivalised wealth once regional age structure is controlled for.

The top 20 displays little change from the earlier top 20 tables for equivalised wealth (Table 9.1) and net worth per household (Table 6.3), although there is some shuffling of positions. The most noticeable change is that Lake Grace is no longer the sole rural SLA in the top 20: it has been joined by the WA wheatbelt SLAs of Gnowangerup, Dalwallinu and Kojonup. All three of these SLAs were ranked in the top 5 per cent of SLAs in terms of both equivalised wealth and net worth per household, but because each of them has a relatively high concentration of children in their population, they shift up the rankings when age structure is controlled for. These SLAs all have high rates of business ownership.

In contrast, the bottom 20 displays a great deal of change from the earlier bottom 20 tables for equivalised wealth (Table 9.2) and net worth per household (Table 6.4). Table 9.6 is dominated by Queensland, Tasmanian and suburban Adelaide SLAs. Table 9.6 contains none of the Palmerston (Darwin) SLAs that were prominent in the previous bottom 20 lists. The main reason the Palmerston SLAs had such low average wealth was their very youthful age structure, and they perform much better when age is controlled for. In fact, most of the Palmerston SLAs are ranked in the top 50 per cent of SLAs after age structure is taken into consideration.

Seven Adelaide suburbs feature in the bottom 20. Of these, only Elizabeth appeared in the previous bottom 20 lists. Interestingly, two Adelaide SLAs (Playford West Central and Salisbury Inner North) have moved out of the bottom 20 because of their relatively youthful age structure. The Adelaide SLAs which feature in the bottom 20 of Table 9.6 have an older age structure, and have low equivalised wealth in comparison to other SLAs with a similar age profile.

Table 9.6 SLAs with highest and lowest equivalised wealth, adjusting for age structure, 2003–04

Highest estimates		*Lowest estimates*	
Rank	*SLA*	*Rank*	*SLA*
1.	Peppermint Grove WA	1135.	Mount Morgan QLD
2.	Woollahra NSW	1134.	South Townsville QLD
3.	Hunter's Hill NSW	1133.	Fortitude Valley Remainder QLD
4.	Mosman NSW	1132.	Derwent Valley Part B TAS
5.	Ku-ring-gai NSW	1131.	Port Adelaide/Enfield: Port SA
6.	Pittwater NSW	1130.	Cairns City QLD
7.	Bayside: Brighton VIC	1129.	Rocklea QLD
8.	Lake Grace WA	1128.	Wacol QLD
9.	Manly WA	1127.	Onkaparinga North Coast SA
10.	Cottesloe WA	1126.	Tasman TAS
11.	Nedlands WA	1125.	Alice Springs: Stuart NT
12.	Lane Cove NSW	1124.	Port Adelaide/Enfield: Coast SA
13.	Malvern VIC	1123.	Broken Hill NSW
14.	Willoughby NSW	1122.	Break O'Day TAS
15.	Red Hill ACT	1121.	Port Adelaide/Enfield: Inner SA
16.	Gnowangerup WA	1120.	Charles Sturt North East SA
17.	Mosman Park WA	1119.	Central Highlands TAS
18.	Chelmer QLD	1118.	Elizabeth SA
19.	Dalwallinu WA	1117.	Townsville City QLD
20.	Kojonup WA	1116.	Port Adelaide/Enfield: East SA

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, 2001 ABS' estimated resident households and 2001 ABS' *Census of Population and Housing* data.

The other feature of the bottom 20 listing is the appearance of a number of inner city SLAs from Queensland, namely South Townsville, Townsville City, Fortitude Valley Remainder and Cairns City. These SLAs have a very low concentration of children in their population, and shift down the rankings when age structure is controlled for. These SLAs also have low rates of home ownership.

The age-adjusted rankings highlight the importance of taking a region's age structure into account when interpreting wealth data. Quite a few regions experienced a dramatic shift in rankings when equivalised wealth was adjusted for age. Youthful SLAs such as Bakewell (Darwin), Vincent (Townsville) and Roxby Downs (SA) shifted from the bottom 20 per cent to the top 20 per cent of SLAs. While these SLAs have relatively low net worth per household, the residents have accumulated considerable wealth for their age. Older SLAs such as Coolangatta (Gold Coast) and Holdfast Bay South (Adelaide) shifted a long way down the rankings when the analysis statistically controlled for age. While these SLAs have above average equivalised net worth, the residents have accumulated relatively little wealth in comparison to others of the same age.

The preceding analysis reveals that the assessment of which regions are least wealthy is very sensitive to whether a snapshot or lifetime perspective is taken. A very different set of regions is identified as 'least wealthy' after adjusting for age. In contrast, identification of the wealthiest regions is quite robust to adjusting for age.

Differences in age structure do not explain the consistently lower level of equivalised wealth in regional centres compared to their immediate rural surrounds. Each of the regional centres listed in Table 6.6 is ranked lower in terms of age-adjusted equivalised wealth than its surrounding rural SLA. This conclusion is therefore robust to both age and household size.

Summary

When attempting to draw inferences about comparative economic wellbeing in different regions, it is worthwhile considering both age and household size. Equivalising the wealth data has a relatively minor impact on lists of the wealthiest and least wealthy regions. The major effect is to reveal a more positive wealth position for inner city areas, while a less positive wealth position is revealed for some outer-suburban mortgage belt areas. Spatial variation in age structure proved to be a much more important driver of regional wealth differences. A very different set of least wealthy regions is identified after adjusting for age, consisting largely of Adelaide, urban Queensland and rural Tasmanian SLAs. Identification of the wealthiest regions is more robust to age adjustment.

Key messages

Consideration of household size and age supports a more informed assessment of regional wealth differences. Low wealth in a region may not be of policy concern if it is due to a small average household size or a youthful age structure.

Differences in the age structure of regional populations are an important driver of regional wealth differences. A very different set of regions are identified as being amongst the 'least wealthy' once age structure is adjusted for.

Adjusting for household size by equivalising the wealth data had a much smaller impact on lists of the wealthiest and least wealthy regions.

The conclusion that regional centres have consistently lower levels of wealth than their rural surrounds is robust to adjustments for age and household size.

Chapter 10 Wealth and economic wellbeing

Economic wellbeing is a multidimensional concept. It is commonly measured using indicators such as GDP per capita at the economy-wide scale, or average/median income for individuals and households. The ABS' *Provisional Framework for Household Income, Consumption, Saving and Wealth* argues that assessment of economic wellbeing involves bringing together information on a household's capacity to consume, its capacity to accumulate wealth and the value of the wealth held by the household (ABS 1995). A series of papers by Osberg (1985) and Osberg and Sharpe (2002, 2005) propose that national economic wellbeing has four major elements:

- per capita consumption flows
- value of accumulated productive assets
- poverty and inequality
- economic security.

This chapter investigates the relationship between household wealth and some key aspects of the economic wellbeing of households, specifically:

- income
- consumption
- economic security
- poverty and disadvantage.

The chapter aims to go beyond merely describing the spatial differences in wealth, to address the broader questions of why wealth matters and what it tells us about how well regions are doing.

Wealth and income

This section analyses the relationship between regional income and wealth levels to determine whether income information in itself provides an adequate picture of regional economic wellbeing, or whether wealth data can provide different signals in certain situations.

From the existing literature, we know that low income households that have significant wealth holdings can use these assets to support a higher standard of living. Similarly, some low income regions may have significant wealth holdings which enable residents to enjoy a relatively high standard of living. To the extent that this is the case, the availability of regional information on household wealth

will provide a more complete picture of regional economic wellbeing and enable improved targeting of economically disadvantaged regions.

Relationships between wealth and income can be assessed at a number of different scales: individual, household, region or nation. The existing literature at the individual and household scale is reviewed, before presenting new evidence on the relationships which exist at a regional scale.

Evidence on the relationship between wealth and income

Wealth and income are partially dependent upon one another. Income can be saved or used to purchase assets, which increases the wealth holdings of a household. Conversely, depending on where it is invested, wealth can be used to generate income through interest, dividends or rental receipts.

Household wealth is positively correlated with household income for working age households (Headey and Wooden 2003). Across the population as a whole, the relationship is only of moderate strength. Using HILDA wave two data, Headey, Warren and Wooden (2008) found that income can only explain about 12 per cent of the variation in wealth across Australian households (i.e. correlation = 0.35). For the 2003–04 SIH, BITRE found that the income data explains about 17 per cent of the variation in wealth across households (i.e. correlation = 0.41). These figures are slightly lower than identified in US research, with the correlation coefficient being 0.49 for the 1983 *Survey of Consumer Finances* (Lerman and Mikesell 1988). Therefore, while the relationship between wealth and income is statistically significant, the great majority of the variation in wealth across households cannot be explained by income.

Household wealth and household income are only moderately correlated because of the underlying lifecycle pattern of wealth accumulation, which leads to wealth and income following different patterns with respect to age:

- Wealth is lowest for the 15 to 24 age group and rises gradually with age, peaking for the 55 to 64 age group, before declining slightly for the older age groups.
- Income is mid-range for the 15 to 24 age group, and rises quickly with age, peaking for the 45 to 54 age group. Beyond this, income declines quite rapidly with age, reaching its lowest point for the 75+ age group.
- The youngest age groups therefore have very low wealth but moderate incomes. Older households have accumulated significant wealth holdings over their lifetime, but in their retirement these households typically have low incomes. The wealth and income data show less contrast for the 35 to 64 age groups.

Creedy and Tan (2007, p. 169) conclude that the relationship between income and net worth is positive after controlling for age, but only for the under 65 age groups. The authors note that:

> 'In the higher age groups, income is no longer a largely independent flow variable that determines the accumulation of net worth. Instead, it is dependent on the amount and form of wealth that has been accumulated over earlier stages of the life cycle.'

ABS (2002) reports that household wealth tends to increase only slowly over income deciles, except for the tenth income decile, where wealth then increases dramatically. Creedy and Tan (2007) report that the highest income quintile has much higher net worth than the other quintiles. Similarly, Baekgaard (1998) finds that average household wealth is broadly similar for each of the first six income deciles, before it increases gradually, and then doubles from decile nine to ten. ABS (2006b) reveals the same pattern. While very high incomes and very high wealth tend to occur together, the wealth relationship is weaker for low and middle income households. Households in the lowest income decile have higher net worth than households in the second and third income deciles.

It is not unusual for low income households to have high wealth, or vice versa. ABS (2006b) reports that 11 per cent of households in the lowest income quintile were in the highest wealth quintile, while 5 per cent of the households in the highest income quintile were in the lowest wealth quintile. Forty per cent of households in the highest income quintile are in the highest wealth quintile, while a somewhat smaller proportion of low income households (33 per cent) experience low wealth. This is consistent with Baekgaard (1998) who identified greater wealth dispersion in the lower income deciles than in the higher deciles.

In a study of those aged 65 and over in six OECD countries, Sierminska, Brandolini and Smeeding (2006) find a similar pattern. For each of the six countries, only a small proportion of low wealth elders (6 per cent or less) are in the top income quartile. The proportion of high wealth elders in the bottom income quartile is consistently higher, ranging from 11 per cent in Italy to 28 per cent in Germany. While the great majority of high wealth elders (67–82 per cent) are in the top income quartile, a minority of low wealth elders (25–38 per cent) are in the bottom income quartile.

Mishra et al (2002) classifies US farm households into four high/low categories based on national median values of income and wealth. While 49 per cent of farm households have high incomes and high wealth, low income and low wealth is relatively uncommon (6 per cent). A substantial proportion of farm households have high wealth and low incomes (43 per cent), but only a small proportion of farm households have high incomes and low wealth (3 per cent).

Thus, across a number of countries and population groups, a consistent pattern emerges. Wealth and income are most closely linked at the top end of the spectrum. Low income households display considerable variation in wealth, with a significant proportion of low income households having high net worth.

Baekgaard (1998) considered that low income but wealthy households were most likely to be retired or self-employed. Creedy and Tan (2007) support this finding, noting that there are many working age individuals with substantial business assets who have low income due to a combination of loan repayments and limited cash inflows.

The characteristics of high income but low wealth households have not specifically been investigated in Australia. For the UK, Warren and Britton (2003) find that this category is dominated by young families. For US farm households, Mishra et al (2002) report that this category has the lowest median age of the four wealth and income categories. Thus, high income households with low wealth are most likely to be headed by younger individuals with well-paying jobs who are yet to accumulate substantial assets.

ABS (2007b) provides a profile of low income low wealth households, referred to as low economic resource households. Fourteen per cent of Australian households were simultaneously in the lowest three deciles for both income and wealth. Children were overrepresented in such households, and over half of all children in sole parent families belonged to low economic resource households. Sole parent families (22 per cent) and lone person households (36 per cent) together made up more than half of low economic resource households. Low employment and home ownership, and high rates of public housing, were other defining characteristics of these households. The great majority (78 per cent) of households with low income and low wealth had government pensions and allowances as their main source of income (ABS 2007b).

Recognising that wealth and income data can provide quite different pictures of economic wellbeing, several studies have attempted to combine the two into a single summary measure (e.g. Irvin 2007, Habib, Kohn and Lerman 1977, Lerman and Mikesell 1988). Such studies typically follow the method proposed by Weisbrod and Hansen (1968) which converts wealth information into an annuity value and adds this to current income (net of returns from wealth), to provide a measure of 'permanent income'. The annuity value of net worth depends on assumptions made about life expectancy.

Using this approach, Lerman and Mikesell (1988) found that 87 per cent of the income poor in the US were also defined as being in poverty when the permanent income measure was used. Consideration of wealth substantially increased measured poverty rates amongst the younger age groups and reduced them for the older age groups, for farmers and homeowners. According to Caner and Wolff (2004), when the annuity value of wealth is added to income, the poverty rate is reduced to about 75 per cent of the standard poverty rate and the estimated poverty rate drops substantially for homeowners. A similar study by Wolff and Zacharias (2007) found that, compared to the wealth adjusted measure of income, the standard income measure understated the wellbeing of those aged 65 and over and overstated the wellbeing of those aged under 45.

Wealth is generally more unequally distributed than income. This is illustrated by Headey, Warren and Wooden (2008) which reports a Gini coefficient of 0.62 for household wealth, compared to 0.42 for gross household income and 0.38 for disposable household income. ABS (2006b) found that in 2003–04 the 20 per cent of households earning the highest weekly gross household incomes earned 4.23 times more income than the 20 per cent of households earning the lowest weekly gross household income. In comparison, the 20 per cent of households owning the most net worth owned 10.44 times more net worth than the bottom 20 per cent of households. Wolff and Zacharias (2007) find that wealth-adjusted income shows greater inequality than standard measures of income for the US.

The key points that emerge from the household scale literature on the relationship between income and wealth are summarised below.

- Household wealth is positively correlated with household income, but the relationship is only of moderate strength.
- Income and wealth are only moderately correlated because of the underlying lifecycle pattern of wealth accumulation. Younger households generally have relatively low wealth, even if incomes are high. Many older households have

accumulated significant wealth holdings over their lifetime, but in their retirement these households will typically have low incomes.

- Wealth and income are most closely linked at the top end of the spectrum. Low income households display considerable variation in wealth and a significant proportion have high net worth.
- Wealth and income information often provide quite different signals about the economic wellbeing of households. As Wolff and Zacharias (2007, p. 83) conclude:

  'Wealth and income are not interchangeable as indicators of economic status or wellbeing. Rather, wealth is an additional measure of economic wellbeing, over and above income.'

- Wealth is more unequally distributed than income.

The aim of the following analysis is to develop a comparable understanding of the relationship between income and wealth *at the regional scale*, and more specifically to answer the following questions:

- How closely linked are regional wealth and regional income?
- Are there a significant number of regions with low income and high wealth, or vice versa?
- In what circumstances do wealth and income provide different signals about economic wellbeing?
- Are regional differences in age structure the main cause of disparities between regional wealth and regional income?
- Does wealth show greater regional variation than income?

Measures of regional income

Ideally, BITRE's average household wealth estimates for SLAs in 2003–04 would be compared to SLA estimates of average household income for 2003–04. Such data are not available, but there are two relevant sources of income data at a detailed regional scale:

- ABS *Census of Population and Housing*: Collects information on weekly household income in census years. Data is collected for each individual aged 15 and over in the household. It is collected in specified income ranges and ABS uses this grouped data to estimate median household income for each SLA. The specific measure used here is median weekly household income in 2001 on a place of usual residence basis.
- ATO *Taxation Statistics*: Information on income is compiled from the tax returns of individual[48] taxpayers on a financial year basis and is published for postcodes. This is the underlying data source for BITRE's *Taxable Income Database*, which contains time series data on RIPT for each SLA (BTRE 2005). The specific measure used here is average (nominal) income per taxpayer in 2003–04.

48. Thus, taxable income for companies, funds, trusts and partnerships is excluded.

Neither data source provides an ideal comparison point for BITRE's measure of average household wealth. The advantages of the census data are that a per household figure is available and the scope covers all Australian households[49] rather than just individual taxpayers. The advantages of the ATO data are that it is available for 2003–04; that less estimation is involved due to the collection of actual income data, rather than grouped data; and that an average, rather than a median, is available for each SLA.

Neither income measure was used as an input to the derivation of BITRE's small area estimates of household wealth.[50] This was a deliberate choice made in order to maintain the validity of the investigation of the spatial relationship between income and wealth.

The two income measures are positively related but the relationship is not as strong as might be expected. The correlation coefficient is 69 per cent across the 1135 in-scope SLAs with more than 500 households. The SLA rankings are more strongly correlated (0.77). Figure 10.1 shows the relationship between these two income measures. While the two measures are quite congruent for low income SLAs, there is a lot of dispersal at the top end of the scale.

The two income measures produce rankings in the same quintile[51] for 42 per cent of the 1135 SLAs and categorise regions to adjacent quintiles for a further 45 per cent of SLAs. There are only 14 per cent of SLAs for which the two income measures categorise regions to different and non-adjacent quintiles. There are two extreme cases where an SLA is categorised to the highest quintile on one income measure and the lowest quintile on the other. However, overall, there are relatively few SLAs for which the two income measures present a vastly different picture.

There are many factors which may contribute to the observed differences between the two income measures. We can, however, rule out the difference in time period as being a major contributor, as the correlation coefficient between the ATO and ABS measures for 2001 is also 0.69. Empirical analysis by BITRE suggests that regional differences in average household size are a key contributor to the difference between the two measures. Other possible contributors include the adoption of different measures of central tendency (mean versus median) and errors introduced by the estimation processes underlying each of the income measures.

Not only do the two income measures have their respective strengths and weaknesses as a comparison point for BITRE's average net worth estimates, but they also differ empirically. Therefore, conclusions about the regional relationship between wealth and income may differ depending on which of the two income measures is adopted. Consequently, the following section considers both income measures.

49. In 2001, 11 per cent of households did not respond to the question or provided a partial response.
50. However, 2001 census data on the proportion of high income households did input into the estimation process for BITRE's small area estimates of vehicle assets and vehicle loans. ATO *Taxation Statistics* data on particular income types (e.g. rental income, interest income) was also an input into the small area estimation process.
51. Quintiles are produced by sorting all observations and then categorising into five equally sized groups. The 20 per cent of SLAs with the highest incomes form quintile one, the next 20 per cent of SLAs form quintile two, and so on

Figure 10.1 Relationship between the ABS and ATO income measures across SLAs

Notes: The green lines on the chart represent the national average. Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Taxable Income Database* and ABS 2001 *Census of Population and Housing*.

Relationship between regional wealth and regional income

Figure 10.2 illustrates the positive relationship between income and wealth at the capital city and state balance scale, as identified by the ABS' SIH. Regional Tasmania has the lowest average wealth and the lowest average income, while Sydney has the highest wealth and also does well in income terms. However, the SIH finds that the NT has the highest average incomes and the second lowest average wealth.[52] This result is evidence that measures of household wealth can potentially provide quite a different picture of regional economic wellbeing than measures of income. Figure 10.2 also suggests that wealth may show greater spatial variation than income.

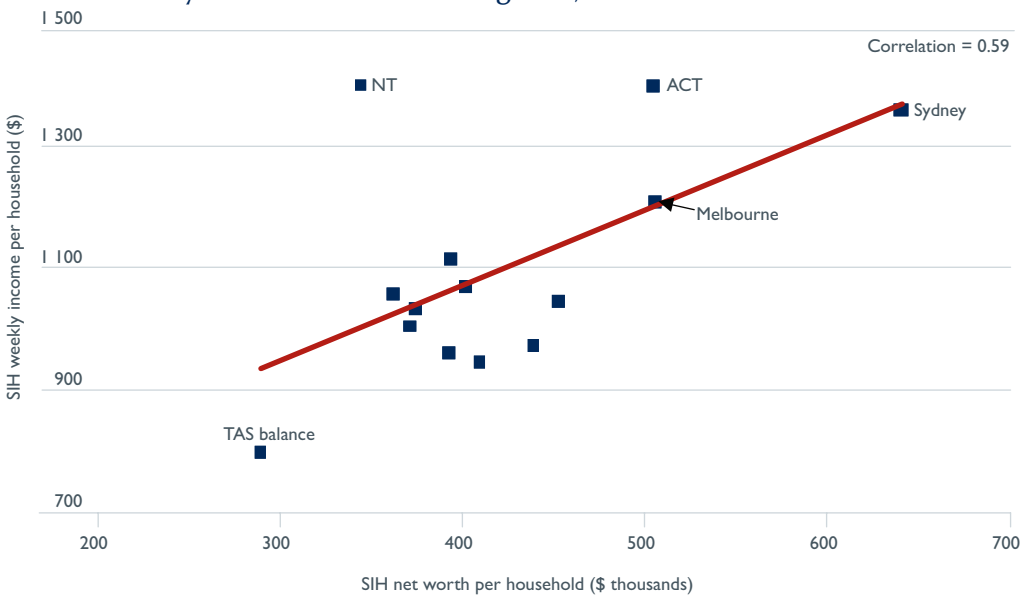
Sorensen (2004) found a positive relationship between taxable income and financial assets for coastal SSDs and metropolitan SSDs, but not for rural SSDs. Remote SSDs displayed a negative association. Financial assets displayed more variation across SSDs than did taxable income.

The remainder of this section focuses on the relationship between wealth and income for the 1135 in-scope SLAs which contain more than 500 households. Wealth is positively correlated with both income measures:

- ATO Income per taxpayer:
  - correlation = 0.64
  - rank correlation = 0.39.
- ABS Median weekly household income:
  - correlation = 0.46
  - rank correlation = 0.33.

52. Note that the scope of the SIH excludes very remote areas and discrete indigenous communities. Data sources which cover all NT households present a less positive picture of income. This exclusion would be expected to lead to the SIH overstating both income and wealth for the NT as a whole.

Figure 10.2 Relationship between household wealth and income across capital city and state balance categories, 2003–04



Source: BITRE analysis of ABS SIH 2003–04.

Of the two income measures, the ATO measure is more closely linked to average household wealth in SLAs. The strength of the relationship between wealth and income is much reduced when the focus is switched to the rankings, rather than the estimates themselves.

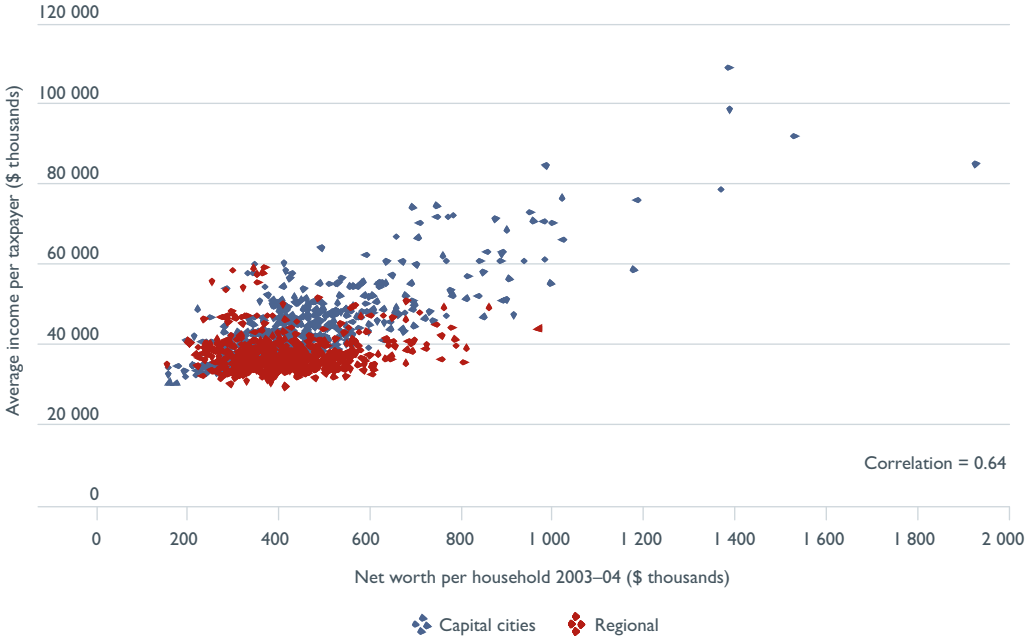
Figure 10.3 illustrates the relationship between net worth per household and each of the income measures. Wealth is more closely related to the ATO income measure, but much of the strength of this relationship comes from the high income and high wealth SLAs. If the top wealth decile is excluded from the analysis, the ATO income correlation drops to 0.26 and the ABS income correlation to 0.23. Thus, when the wealthiest regions are taken out of the picture, the link between income and wealth is relatively weak, irrespective of which income measure is used. For the most wealthy regions, there is a stronger link between the wealth and income measures, particularly the ATO income measure. This parallels the findings of Baekgaard (1998) at the household scale.

Moreover, while a strong positive association between wealth and income is evident across capital city SLAs, there is virtually no correlation between the wealth and income measures for non-capital city SLAs. For capital city SLAs, wealth is highly correlated with both the ATO income measure (0.80) and the ABS income measure (0.64). For non-capital city SLAs, there is little association between wealth and either the ATO income measure (0.09) or the ABS income measure (0.03).

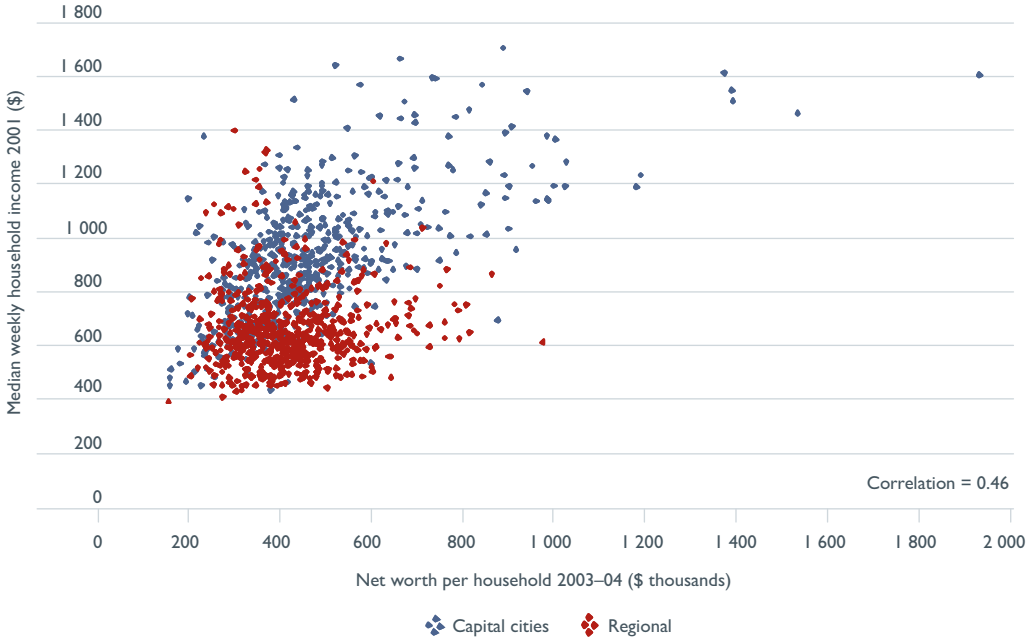
The pattern is further illustrated by Figure 10.4, in which the SLAs are grouped into wealth deciles, and the median values of the two income measures are plotted for each decile. The income measures rise gradually across deciles one to nine, but the SLAs in the top wealth decile have markedly higher income than the SLAs in the other nine deciles. The ATO income measure increases more gradually across the wealth deciles, than does the ABS income measure.

Figure 10.3 Relationship between household wealth and income measures across SLAs

(a) ATO income per taxpayer, 2003–04



(b) ABS Median weekly household income 2001

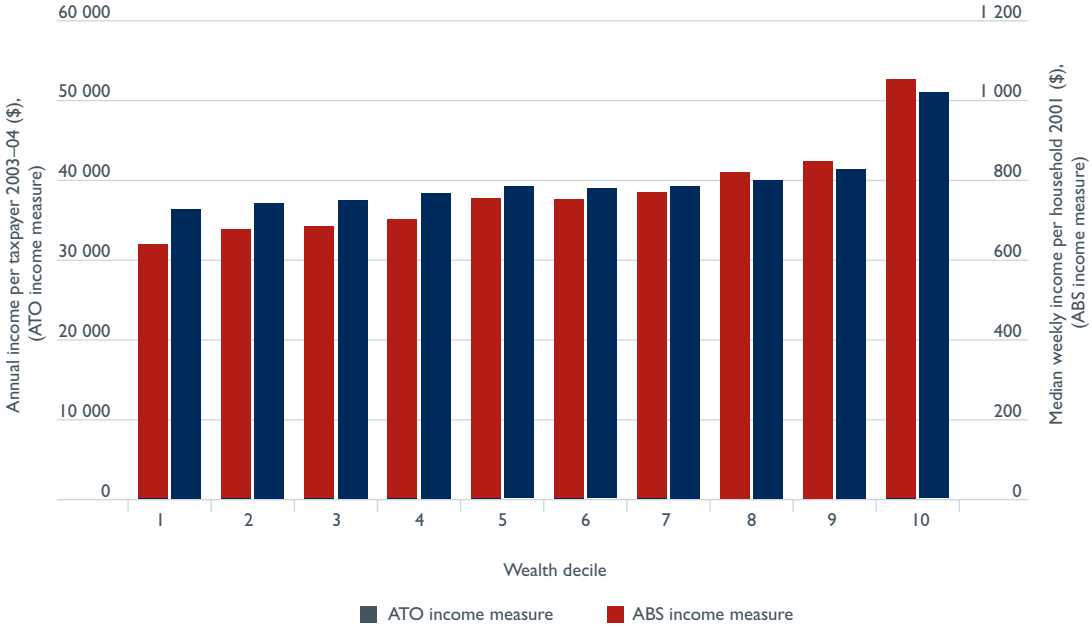


Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database* and *Taxable Income Database* and ABS 2001 *Census of Population and Housing*.

From Figure 10.3 it is also apparent that the wealth estimates show greater variation at the SLA scale than the ATO income estimates. The coefficient of variation (standard deviation/mean) for wealth is 34 per cent, compared to 19 per cent for the ATO income measure and 30 per cent for the ABS income measure. The ATO measure displays less spatial variation, at least in part because of the limitation of its scope to individual taxpayers, rather than the entire population of the region.

Figure 10.4 Median SLA value of ATO and ABS income measures for each wealth decile



Notes: The chart presents the median value of the ATO/ABS income measures across the 113–114 SLAs in each wealth decile. Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database* and *Taxable Income Database* and ABS 2001 *Census of Population and Housing*.

When the wealth and ATO income data are grouped into quintiles:

- 31 per cent of SLAs are categorised in the same quintile for wealth and income
- 35 per cent of SLAs are categorised into adjacent quintiles for wealth and income
- The wealth and income data are categorised to different and non-adjacent quintiles for the remaining 34 per cent of SLAs.

Thus, for roughly two-thirds of the in-scope SLAs, the wealth and ATO income rankings are reasonably well aligned. Roughly half of all SLAs which are in the top quintile for wealth are also categorised to the top ATO income quintile. However, less than one-third of SLAs in the bottom wealth quintile are also categorised to the bottom income quintile. Therefore, the wealth and ATO income data are more consistent in identifying particularly well-off regions than in identifying relatively disadvantaged regions.

While there is a positive overall relationship between the wealth and ATO income data, there are numerous exceptions to the overall pattern. There are 20 SLAs which belong to the top wealth quintile and the bottom income quintile, and a further 16 SLAs which belong to the bottom wealth quintile and the top income quintile. For 210 of the 1135 SLAs (19 per cent), the gap between the wealth and ATO income rankings exceeds 500 places. Wealth markedly outperforms income for 10 per cent of SLAs, and income markedly outperforms wealth for 9 per cent of SLAs. For these SLAs, the wealth and ATO income data, at face value, present contradictory messages about the economic wellbeing of the SLA.

The analysis was repeated for the ABS income measure, and the results were qualitatively very similar, except that the ABS income measure was less well aligned with the wealth measure. For 233 of the 1135 SLAs (21 per cent), the gap between the wealth and ABS income rankings exceeds 500 places. For these SLAs, the wealth and ABS income data, at face value, present contradictory messages about the economic wellbeing of the SLA.

The income measures are able to explain 41 per cent of the variation in wealth across the 1135 SLAs, but the explanatory power comes almost entirely from the ATO income measure. This is largely due to the close link between the ATO income measure and the BITRE wealth measure for the most wealthy regions. When the top wealth decile is excluded from the analysis, the two income measures are only able to explain 7 per cent of the variation in wealth across SLAs. Both income measures make a statistically significant contribution, but income is a poor predictor of household wealth for all but the wealthiest SLAs. The regression results are provided below.[53]

All in-scope SLAs with more than 500 households

Wealth = –67.8 + 11.8 ATO Income + 0.03 ABS Income
(p = 0.00) (p = 0.00) (p = 0.17)

R-squared = 0.41

Excluding the top wealth decile

Wealth = 240.5 + 3.1 ATO Income + 0.05 ABS Income
(p = 0.00) (p = 0.00) (p = 0.01)

R-squared = 0.07

For some regions the wealth and income data provide very different signals. Table 10.1 identifies those regions which have very high wealth, but relatively low incomes according to both income measures. The following observations can be made:

- None of the regions in this table fall within the 100 most wealthy SLAs in Australia. The 100 most wealthy SLAs in Australia all have moderate or high incomes.
- There are no very high wealth and low income SLAs located within the capital cities.
- The five largest states all feature and none is dominant. No SLAs with very high wealth and low income were identified for Tasmania, NT or the ACT.

53. The wealth and ATO income data in the regressions are measured in thousands of dollars, while the ABS income data is measured in dollars.

- All of the SLAs, except Augusta-Margaret River, have a median age which exceeds the national median age of 35.
- For the majority of the SLAs in Table 10.1, net business assets make up a high proportion of net worth, well in excess of the national average share of 8 per cent. The SLAs for which net business assets contribute more than one-quarter of net worth are predominantly rural SLAs where a high proportion of households own farm businesses. For these SLAs, income is often low, and can fluctuate considerably from year to year. Business assets are an illiquid form of asset and this has implications for assessing economic wellbeing. Nevertheless, households with high wealth due to substantial farm business assets, generally have more options open to them if income suddenly falls, compared to households with limited assets and low wealth.
- There are also a significant number of coastal SLAs in the table, which have low or moderate business assets. Many have an above average proportion of wealth tied up in the owner-occupied dwelling. Baum, O'Connor and Stimson (2005) identify several of these as belonging to a welfare/retirement disadvantaged non-metropolitan cluster (e.g. Byron, Shoalhaven, Great Lakes, Ballina).[54] Augusta-Margaret River, Robe, Colac-Otway, Ballina, Byron, Shoalhaven, Maroochy and Gold Coast have been identified as sea change communities by the National Sea Change Taskforce (2005 p. 16). The Taskforce reports that:

  > 'More affluent sea changers realise high capital gains from city housing and "down size" in lifestyle destinations, where property prices are lower . . . This has been described as part of a broader trend to "downshift" by voluntarily reducing income and consumption levels'.

  To the extent that residents fit this mould, the low average incomes in these high wealth SLAs may reflect a deliberate choice to improve lifestyle by moving region and voluntary reducing income. The income data would then provide an overly negative picture of the region's economic wellbeing. Sorensen (2004 p. 19) notes that retirement and lifestyle SSDs can 'give the visual impression of being well-heeled even if studies of well-being suggest the opposite'—this apparent anomaly can be resolved by considering wealth as well as income.

Thus, Table 10.1 reveals two main types of region which have very high wealth combined with low incomes. The first type is rural SLAs for which a very large proportion of wealth is held in the form of farm business assets. The second type is sea change communities. Both types of region tend to have relatively old age profiles, and some SLAs overlap the two categories (e.g. Robe SA). Augusta-Margaret River also has some characteristics of both categories and is explored in more detail in Chapter 11.

54. The Sunshine Coast and Gold Coast also belong to this cluster. Bilinga SLA is part of the Gold Coast, while Maroochy Balance and Caloundra Hinterland SLAs are part of the Sunshine Coast.

Table 10.1 SLAs with very high wealth and low income

SLA	Wealth rank	ATO Income rank	ABS Income rank	Median age, 2001	Net business assets share of wealth, 2003–04 (per cent)	Net owner-occupied property assets share of wealth, 2003–04 (per cent)
Jerilderie NSW	110	692	711	37	54	9
Colac Otway South VIC	116	1 038	897	41	20	44
Loddon North VIC	119	1 108	913	41	58	10
Bilinga QLD	122	710	1 065	44	2	59
Northampton WA	126	702	1 048	39	38	17
Robe SA	134	928	759	40	32	30
Moyne North East VIC	135	1 062	924	40	53	14
Caloundra Hinterland QLD	140	785	1 005	42	9	49
Byron NSW	147	947	1 005	38	8	51
Tallaganda NSW	153	685	930	43	25	33
Gingin WA	163	734	906	39	25	31
Lockhart NSW	164	759	779	39	49	14
South Grampians: Wannon VIC	169	1 037	1 029	43	51	13
Shoalhaven Part B NSW	172	720	1 078	44	6	55
Maroochy Balance QLD	185	918	747	37	9	55
Towong Part B VIC	186	1 121	837	42	46	15
Augusta-Margaret River WA	189	1 042	724	35	20	36
Plantaganet WA	190	1 016	937	38	44	15
Tumby Bay SA	191	778	1 078	44	34	29
East Gippsland South West VIC	193	1 015	724	39	30	29
Crookwell NSW	196	742	887	42	38	25
West Wimmera VIC	199	697	960	41	46	14
Lacepede SA	202	826	868	40	42	26
Great Lakes NSW	208	792	1 099	47	6	53
Taroom QLD	211	1 049	747	37	56	8
Ballina NSW	212	764	917	41	8	49
Yankalilla SA	220	1 055	988	43	20	41
Walcha NSW	222	743	889	39	44	12
Wakool NSW	226	1 064	824	39	46	16

Notes: For the purposes of this table, 'low income' refers to SLAs for which both measures fall into one of the bottom two quintiles, while 'very high wealth' has been defined more narrowly and refers to the top wealth quintile only. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing* usual residence data.

Table 10.2 focuses on the regions which have very low wealth, but relatively high incomes according to both income measures. The following observations can be made from this table:

- The NT and Queensland are very well represented.
- Apart from Darwin, the only capital city SLAs to feature in Table 10.2 are the high population density suburbs of Inner Fortitude Valley in Brisbane and Belconnen Town Centre in Canberra, and the Melbourne SLA of Wyndham West, which has a very high proportion of households with outstanding mortgages.
- All of the SLAs in Table 10.2 have a median age below the national median age of 35. Regions with a very youthful age profile would be expected to perform rather poorly in terms of wealth, but rather better in terms of income. This gap can be large in those regions where young people have the potential to earn very high incomes.

- Some SLAs in Table 10.2 have a large mining industry (e.g. Port Hedland, Coolgardie and Kalgoorlie/Boulder in WA; Emerald, Duaringa, Cloncurry and Mount Isa in QLD; and Roxby Downs in SA). Mining employs many young people at a relatively high wage, but the employees have not yet accumulated much wealth. Home ownership rates are low and owner-occupied property assets make up less than 20 per cent of net worth in all of these mining SLAs. Similar drivers probably lie behind the high income/very low wealth outcomes in Katherine, which contains a RAAF base, and Gladstone and the adjoining Calliope Part A, which both have growing employment in metal manufacturing. A more detailed analysis of Gladstone is provided in Chapter 11.
- Nine Darwin SLAs feature in the table, but they do not have a single defining characteristic, apart from the low median age. The City Remainder SLA contains a RAAF base and few residents are home owners. In contrast, more than half of all households have outstanding mortgages in the Bakewell and Palmerston Balance SLAs. Many of the Darwin SLAs featured in Table 10.2 have significant indigenous populations and/or defence employment. Five belong to the Palmerston LGA on Darwin's outskirts.

Table 10.2 SLAs with very low wealth and high income

SLA	*Wealth rank*	*ATO income rank*	*ABS income rank*	*Median age, 2001*	*Mining share of employment, 2001 (per cent)*	*Net owner-occupied property assets share of wealth, 2003–04 (per cent)*
Palmerston Balance NT	1 127	381	95	28	0	12
Bakewell NT	1 119	343	180	26	1	26
City Remainder NT	1 114	129	157	25	0	3
Durack NT	1 108	395	27	27	1	22
Mount Isa QLD	1 103	214	129	29	22	10
Woodroffe NT	1 096	391	217	28	1	23
Inner Fortitude Valley QLD	1 086	196	291	28	0	11
Coolgardie WA	1 082	58	108	29	43	9
Driver NT	1 081	392	202	27	1	24
Katherine NT	1 072	378	220	29	0	12
Gladstone QLD	1 047	204	358	31	1	31
Mt Louisa-Mt St John-Bohle QLD	1 043	453	343	29	1	27
Belconnen Town Centre ACT	1 035	257	422	26	0	21
Duaringa QLD	1 030	81	114	29	30	9
Cloncurry QLD	1 023	210	318	29	13	9
Cranbrook QLD	1 015	446	366	31	1	29
Malak NT	995	340	224	29	1	31
Kalgoorlie/Boulder Part A WA	993	159	119	29	20	17
Roxby Downs SA	988	45	24	28	44	14
Karama NT	987	341	234	28	1	29
Emerald QLD	970	209	245	30	11	18
Alice Springs: Larapinta NT	963	382	155	30	0	29
Millner NT	957	299	323	31	1	28
Wyndham West VIC	944	435	236	30	0	38
Calliope Part A QLD	933	203	271	34	1	38
Port Hedland WA	922	78	52	29	20	13

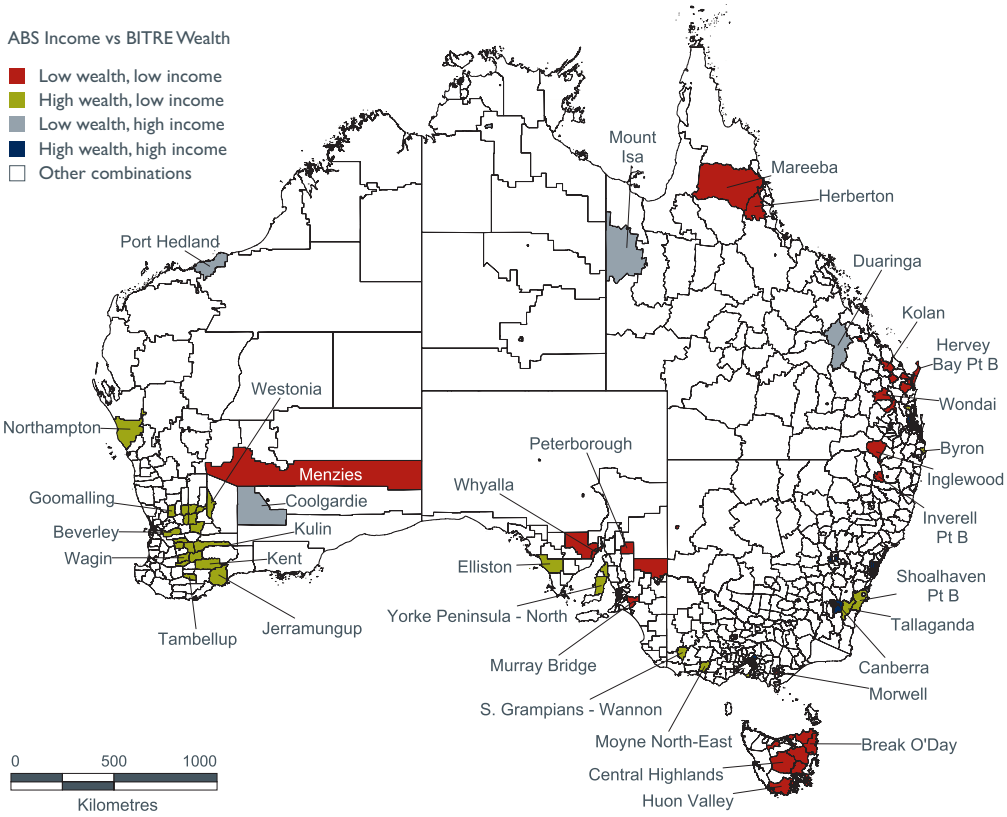
Notes: For the purposes of this table, 'high income' refers to SLAs for which both measures fall into one of the top two quintiles, while 'very low wealth' has been defined more narrowly and refers to the bottom wealth quintile only. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing* usual residence data.

Thus, Table 10.2 reveals that the common characteristic of regions which have very low wealth combined with high average incomes is a youthful age structure. Many mining centres have high incomes and very low wealth, as do a diverse array of non-mining SLAs, including high population density urban SLAs, outer suburban mortgage belt SLAs and SLAs with a defence base or expanding manufacturing industry.

Figure 10.5 maps the national relationship between wealth and the ABS income measure, while Figure 10.6 maps the relationship between wealth and the ATO income measure.

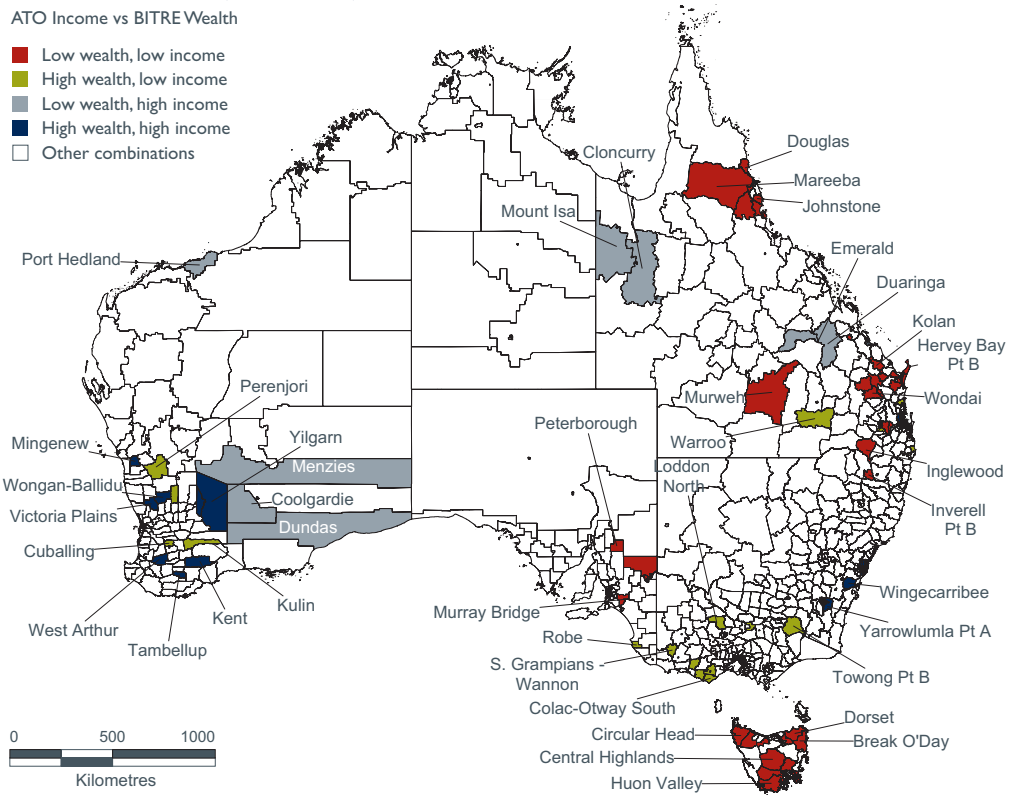
Figure 10.5 Relationship between household wealth and ABS income meaure, SLAs, Australia



Notes: Based on 2001 ASGC boundaries. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. If an SLA is in the top quintile for wealth (income) it is assessed as 'high wealth' ('high income'). SLAs in the bottom quintile are assessed as low wealth/income.

Source: BITRE *Household Wealth Database* and 2001 ABS' *Census of Population and Housing*.

Figure 10.6 Relationship between household wealth and ATO income measure, SLAs, Australia, 2003–04



Notes: Based on 2001 ASGC boundaries. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. If an SLA is in the top quintile for wealth (income) it is assessed as 'high wealth' ('high income'). SLAs in the bottom quintile are assessed as low wealth/income.

Source: BITRE *Household Wealth Database and* BITRE *Taxable Income Database*.

While the particular regions that are highlighted differ across the two maps, there are some common patterns.

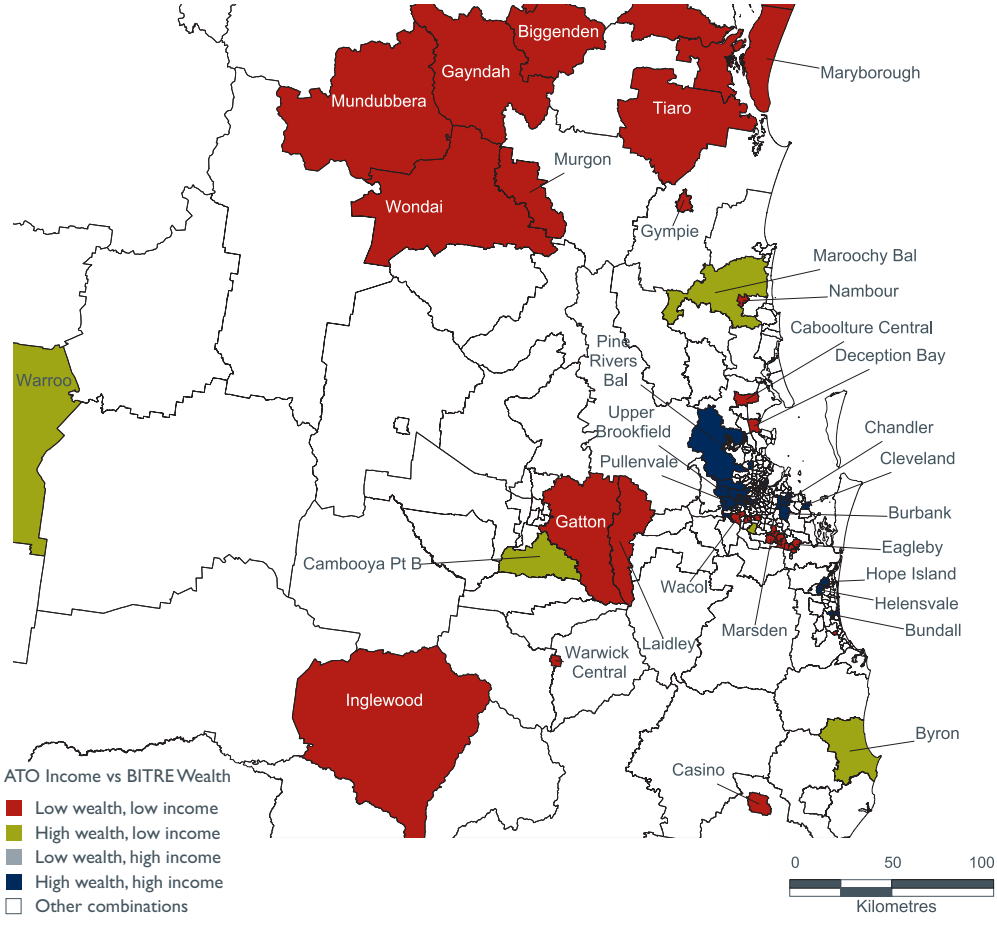
- **High income, high wealth** regions (blue) are largely concentrated in the major cities (particularly Sydney, Melbourne, Perth, Brisbane and Canberra) and so are generally not visible on the two national maps. Wingecarribee (which contains Bowral, Mittagong and Moss Vale), Yarrowlumla Part A (which adjoins the ACT) and two Gold Coast suburbs (Hope Island, Main Beach-Broadwater) also have high wealth and high income. The ATO income measure identifies several rural SLAs in WA as having high wealth coupled with high income, but the ABS records low or medium income for these SLAs. Appendix C details the 87 SLAs that are in the top quintile for wealth and both income measures.

- **Low income, low wealth** regions (red) are very prominent in Tasmania. Adelaide, northern NSW, south west Brisbane, Wide Bay-Burnett and far north Queensland also contain concentrations of SLAs with low wealth and low income. Appendix C details the 41 SLAs that are in the bottom quintile for wealth and both income measures. The list contains some of the more economically disadvantaged places in Australia, outside of indigenous communities.

- **High income, low wealth** regions (green) are typically remote mining communities, such as Duaringa, Mount Isa, Roxby Downs, Kalgoorlie-Boulder and Port Hedland. Some other SLAs with young populations also have high income and low wealth, such as Acton in the ACT (which contains the Australian National University campus) and City Remainder in Darwin (which contains a RAAF base).
- **Low income, high wealth** regions (yellow) are most commonly agriculturally based SLAs in regional WA, SA and Victoria. Some coastal SLAs, such as Byron, are also characterised by low income and high wealth. Based on income statistics alone, these regions may be assessed as disadvantaged, but the wealth data suggests the average household has substantial wealth holdings that can be used to support consumption and maintain lifestyle.

Figure 10.7 focuses in on northern NSW and south east Queensland, examining the relationship between wealth and the ATO income measure. This region is of interest because it contains all four possible income and wealth combinations.

Figure 10.7 Relationship between household wealth and ATO income measure, SLAs, south east Queensland, 2003–04



Notes: Based on 2001 ASGC boundaries. The analysis excludes SLAs with fewer than 500 households in 2003–04. If an SLA is in the top quintile for wealth (income) it is assessed as 'high wealth' ('high income'). SLAs in the bottom quintile are assessed as low wealth/income.

Source: BITRE *Household Wealth Database and* BITRE *Taxable Income Database*.

The pockets of disadvantage (low wealth and low income) to the south-west of Brisbane and in the Wide Bay-Burnett region are a feature of Figure 10.7. Regional centres such as Warwick, Gympie and Nambour also do poorly in terms of both wealth and income. At the other end of the spectrum, there are many Brisbane suburbs that have high wealth and high income, particularly to the north west of the city centre.

There are only a handful of SLAs in the region for which the wealth and income data present a markedly different picture. The two Fortitude Valley SLAs have high income, but low wealth, reflecting a youthful age structure and low home ownership. There are also several SLAs which have low income, but high wealth, namely Pallara-Heathwood-Larapinta (Brisbane), Maroochy Balance, Cambooya Part B, Byron and Warroo.

The role of age structure

This subsection is focused on identifying the extent to which the observed differences in income and wealth rankings for a region can simply be attributed to differences in age structure across regions.

Household wealth and income follow different patterns with respect to age. The youngest age groups have very low wealth but moderate incomes, while the oldest age groups have very low incomes combined with moderate to high wealth. The wealth and income data show less contrast for the 35 to 64 age groups.

There are considerable differences in the age structure of regional populations throughout Australia. Therefore, we would expect these differences in wealth and income across the lifecycle to be reflected in differences in the wealth and income performance of regions.

Table 10.3 summarises how the SLA estimates of wealth and income vary with median age. Wealth tends to be lowest for SLAs with a median age of less than thirty, and rises across the age categories. In contrast, both income measures are highest for SLAs with a median age of less than thirty and tend to decline across the age categories. The ATO income measure does not decline uniformly with age, being marginally higher for the 45 plus category than for the 40–44 category. These patterns are reinforced by the correlation with median age across SLAs, which is positive for wealth (0.31) and negative for the ATO and ABS income measures (negative 0.14 and 0.42 respectively).

Overall the available evidence suggests that we should expect contrasting wealth and income data for many of the SLAs which have a particularly youthful or a particularly old age structure.

Table 10.3 Income and wealth estimates by median age category, SLAs

Median age	*Number of SLAs*	*Net worth per household, 2003–04 ($ thousands) (median)*	*ATO Income, 2003–04 ($) (median)*	*ABS Weekly income, 2001 ($) (median)*
Less than 30	72	299	43 115	983
30–34	344	375	40 214	860
35–39	509	431	38 482	691
40–44	187	450	36 177	584
45 or more	23	476	36 527	493

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing* place of usual residence data.

Regression analysis was used to identify the extent to which the age structure of an SLA could explain the difference in that SLA's wealth and income rankings. The dependent variable in the regression is the wealth rank less the income rank, where the SLA with the highest wealth (income) receives a ranking of one. When the dependent variable is positive, income outranks wealth. The analysis was repeated for both the ATO and ABS income measures and is summarised in Table 10.4. Note that the regression with the ATO income variable controls for average household size as well as age structure. This was not necessary for the ABS income measure, as both the wealth and income measures are expressed on a per household basis.

From Table 10.4, it can be seen that regional differences in median age are capable of explaining more than half of the disparity between the regional wealth and ABS income rankings. The higher a region's median age, the more likely the wealth ranking will outperform the ABS income ranking by a large amount (i.e. the more negative the dependent variable). Adding in a greater range of age-related variables improves the model's explanatory power, but does not alter these basic conclusions. Having a high proportion of people in the younger age groups makes it more likely the income ranking will outperform the wealth ranking for a region, while a high proportion of people in the 55–64 age group has the opposite effect. The regression analysis suggests that about 60 per cent of the observed difference in the wealth and income rankings across regions can be attributed to regional differences in age structure.

Table 10.4 Age as an explanator of the difference in wealth and income rankings for SLAs

Explanatory variables	*Dependent variable = Wealth rank minus ABS income rank*		*Dependent variable = Wealth rank minus ATO income rank*	
	Median age only	*Age share variables*	*Median age and household size only*	*Age share variables and household size*
Constant	2 538**	–1 880**	3 070**	–1 145*
Population share aged 0–14	nr	3 471**	nr	2 260**
Population share aged 15–24	nr	3 580**	nr	3 441**
Population share aged 25–34	nr	4 261**	nr	4 097**
Population share aged 45–54	nr	2 627**	nr	ns
Population share aged 55–64	nr	–2 386**	nr	–2 749**
Population share aged 65+	nr	ns	nr	ns
Median age	–71**	nr	–63**	nr
Average household size	nr	nr	–356**	–178**
Adjusted R-squared (per cent)	58.9	62.1	44.1	48.2

Notes: Excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

All age data relates to 2001. The 35–44 age category was omitted to avoid perfect multicollinearity. nr = not relevant; ns = not significant at 10 per cent significance level; * = significant at 10 per cent level; ** = significant at 1 per cent level.

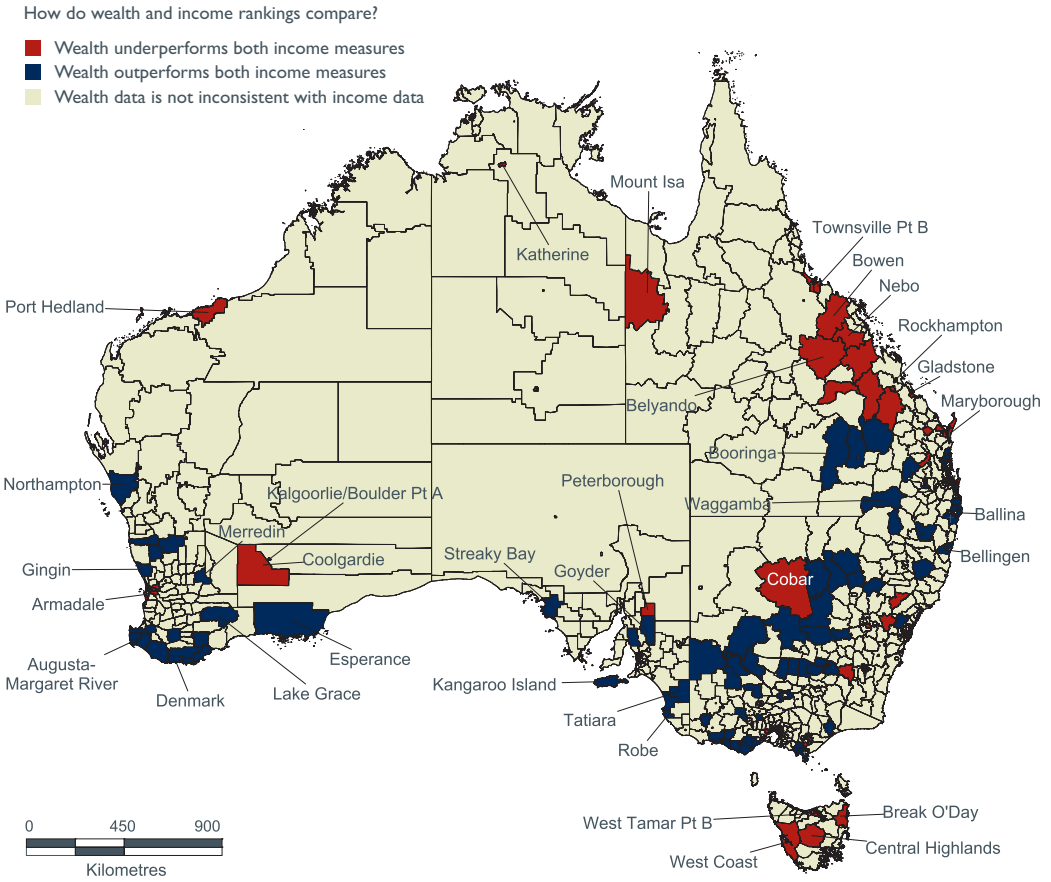
Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing* place of usual residence data.

The regressions based on the ATO income variable have a lower explanatory power, despite the inclusion of the household size variable. However, the parameter signs and magnitudes are similar. Regional differences in age structure and household size are capable of explaining just under half of the observed difference in the wealth and ATO income rankings across regions.

This analysis confirms that regional differences in age structure play a very important part in explaining differences in the wealth and income performance of a region. However, differences in age structure are certainly not the whole story. The maps on the following pages highlight those regions where the wealth data provide a very different signal about economic wellbeing than the two income measures, and the difference cannot be explained by a region's age profile. Age structure and household size were controlled for using the regression results with the age share variables from Table 10.4. The coloured regions in Figures 10.8 and 10.9 highlight those regions for which the predicted rank gap exceeds 250 places, irrespective of which of the two income measures is compared to the wealth estimate.

Figure 10.8 shows considerable spatial clustering. The income measures present a far more positive picture of economic wellbeing than does the wealth data for many central Queensland SLAs, including Gladstone, Rockhampton and Emerald. Several mining SLAs belong to this category, as do several Tasmanian SLAs and a number of outer suburban SLAs (e.g. Armadale WA, Wyndham West VIC, Townsville Part B QLD).

Figure 10.8 SLAs for which wealth and income rankings are very different, controlling for age and household size, Australia



Notes: Based on 2001 ASGC boundaries. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. Coloured regions on the map have a predicted gap between the wealth and income ranks of at least 250 places, for both income measures. The predicted rank gap is estimated using the regression equations in Table 10.4, and controls for regional age structure and average household size (for the ATO measure).

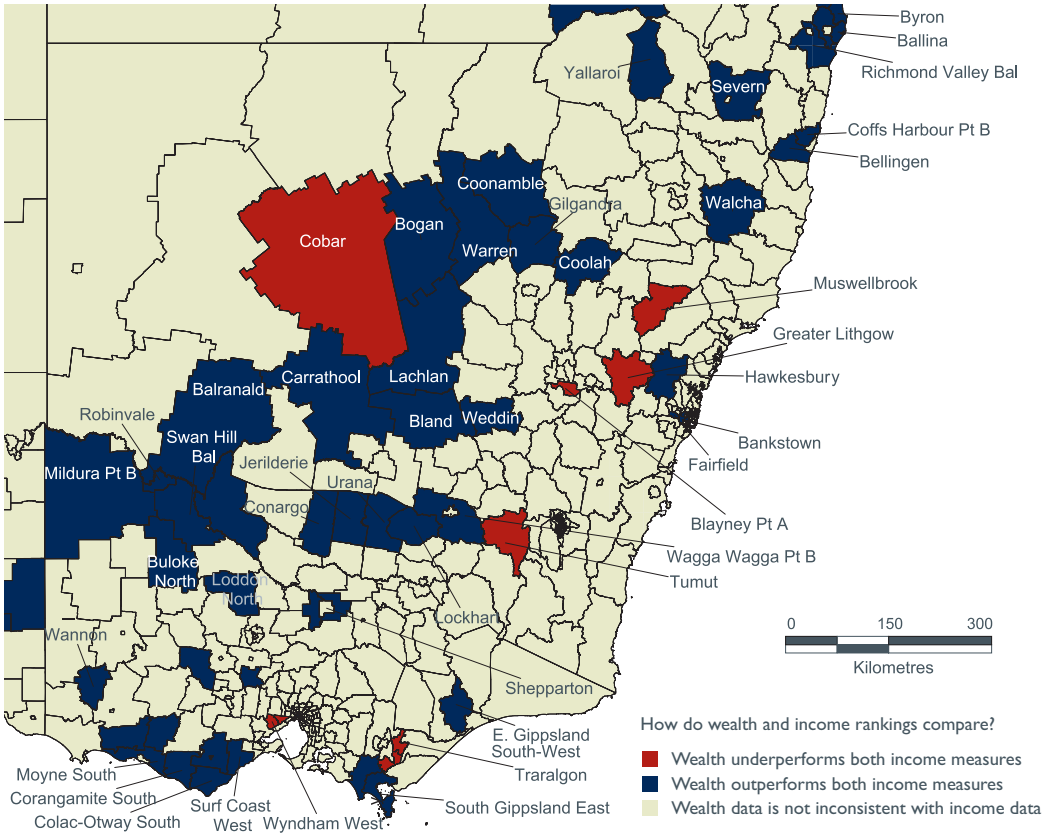
Source: BITRE analysis of *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing*.

The wealth estimates present a far more positive picture of economic wellbeing than the two income measures for a mix of coastal, metropolitan and agriculturally-based SLAs. There are notable clusters along WA's south western coastline, Victoria's west coast, north west Victoria, inland southern Queensland, the Sunshine Coast, mid western Sydney, NSW's far north coast and much of western NSW.

Table 10.1 previously identified a set of regions which had very high wealth and low income, nearly all of which had an older age structure than Australia. Many of these SLAs have also been highlighted in Figures 10.8 and 10.9 as places in which wealth outperforms income, after controlling for the influence of age. For these SLAs, the older age structure may contribute to the wealth measure outperforming the income measure, but it is not the whole story and other factors also play an important role.

For example, Byron is ranked in the top 20 per cent of Australian SLAs in terms of wealth and the bottom 20 per cent for both income measures. While Byron's median age is somewhat higher than the national median age (38 versus 35), this makes a relatively minor contribution to the stronger wealth ranking. Other factors lie behind the strong wealth performance, such as the region's high property values.

Figure 10.9 SLAs for which wealth and income rankings are very different, controlling for age and household size, south east Australia



Notes: Based on 2001 ASGC boundaries. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. Coloured regions on the map have a predicted gap between the wealth and income ranks of at least 250 places, for both income measures. The predicted ranking gap is estimated using the regression equations in Table 10.4, and controls for regional age structure and in the case of the ATO measure, average household size in the region.

Source: BITRE analysis of *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing*.

Table 10.2 previously identified a set of regions which had very low wealth and high income, nearly all of which had a younger age structure than Australia. Many of these SLAs are highlighted in Figures 10.8 and 10.9 as places in which wealth underperforms income, after controlling for the influence of age. For these SLAs, the younger age structure is responsible for only part of the difference between the wealth and income rankings. Reliance on income data alone overstates the economic wellbeing of many mining communities, which have much lower wealth than would be expected given their income, age structure and household size.

Summary: wealth and income

The key messages from the literature about the relationship between income and wealth for households were summarised earlier in this chapter. This section has focused on presenting new evidence about the nature of the regional relationship between wealth and income. The questions posed earlier in the chapter are addressed, in turn, below.

How closely linked are regional wealth and regional income?

At the SLA scale, wealth and income are moderately positively correlated. However, much of the strength of this association arises from the strong connection between wealth and income at the top end of the scale. When the top wealth decile is excluded from the analysis, the link between income and wealth is fairly weak, and the two income measures are only able to explain seven per cent of the variation in wealth across SLAs. While there appears to be some connection between wealth and income within the capital cities, there is no evidence of a connection between regional wealth and regional income in the rest of Australia.

Are there a significant number of regions with low income and high wealth, or vice versa?

The wealth and income data present highly contrasting messages[55] about economic wellbeing for about 20 per cent of Australian SLAs. Depending on which income measure is adopted, roughly 20 SLAs are in the bottom wealth quintile and the top income quintile, and a similar number are in the top wealth quintile and the bottom income quintile.

In what circumstances do wealth and income provide different signals about economic wellbeing?

The common characteristic of regions which have low wealth combined with high incomes is a youthful age structure. Many mining centres have high incomes and low wealth, as do some high population density urban SLAs, outer suburban mortgage belt SLAs and SLAs with a defence base or expanding manufacturing industry.

There are two main types of region which have high wealth combined with low incomes. The first type is rural areas in which a large proportion of wealth is held in the form of farm business assets. The second type is sea change communities. Both types of region tend to have relatively old age profiles. Based on income statistics alone, these regions may be assessed as disadvantaged, but the wealth data suggests

55. The adopted cut-off was a gap between the wealth and income ranks of more than 500 places.

the average household has substantial wealth holdings that can be used to support consumption and maintain lifestyle.

Wealth and income measures tend to provide different signals about economic wellbeing when regions have a particularly young or old age structure.

Are regional differences in age structure the main cause of disparities between regional wealth and regional income?

Roughly half of the observed difference in the regional wealth and income rankings can be attributed to regional differences in age structure. The age structure of the local population is the single most important cause of disparities in the wealth and income data for a region. However, considerable regional disparities persist even after controlling for age. Other factors, such as property prices, migration flows, business assets and saving propensities, appear to contribute to differences between the wealth and income performance of Australia's regions.

Does wealth show greater regional variation than income?

Wealth appears to display a greater degree of variation across regions than income does. Thus, reliance on regional income data may understate the extent of regional disparities in economic wellbeing.

Wealth and consumption

This section reviews the evidence on the links between wealth and consumption—a fundamental element of economic wellbeing. Households that have substantial wealth holdings can use their assets to support a higher standard of living, either by running down cash reserves, selling assets or using assets as collateral to borrow funds.

Studies investigating the propensity to consume out of housing and/or financial wealth have been particularly prevalent in recent years, reflecting strong growth in property and equity prices (Bover 2005). This section begins with an overview of the available evidence at the micro scale, before summarising the macro evidence. Some new information about the regional relationship between household wealth and consumption expenditure is also presented.

Micro evidence

The micro evidence reflects the lack of datasets which include comprehensive measures of changes in both wealth and consumption for households.[56] However, micro scale studies potentially provide more powerful evidence than macro scale studies, because the effect of wealth on consumption can be more readily isolated from confounding influences (Bover 2005, Grant and Peltonen 2008).

ABS (2006b) investigates the reasons why households in the bottom income decile have consistently reported higher average expenditures than households in the second income decile. A partial explanation is provided by the fact that households

56. There are numerous studies which do not directly measure total consumption, but impute it in various ways to estimate a marginal propensity to consume out of wealth (e.g. Skinner 1989, Engelhardt 1995, Disney, Gathergood and Henley 2007). This review focuses on studies which directly measure consumption.

in the bottom decile have higher net worth than households in the second and third deciles. For a given level of income, consumption expenditure tends to increase as wealth increases. However, there are additional factors, beyond income and wealth, which contribute to the relatively high expenditures of the lowest income households. In particular, households that own an unincorporated business or rental property appear to have greater economic resources and expenditure than indicated by their recorded income and wealth.

ABS (2007b) examines the characteristics of households which have both low income and low wealth, finding these households have considerably less expenditure on goods and services than households with low income, but medium or high wealth. For the US, Mishra et al (2002) finds that, in the face of negative income shocks, farm families tend to maintain their consumption by relying on savings, reducing inventories, selling farm assets or borrowing.

Schwartz et al (2006) examined housing equity withdrawal in Australia in 2004. Around 7 per cent of households made a net equity withdrawal involving an increase in debt on their existing property. A further 4 per cent withdrew equity through property transactions. The most common equity withdrawal methods were refinancing and new loans (4.5 per cent), selling more properties than bought (2.7 per cent) and redraw facilities (1.4 per cent).

While the majority of the funds withdrawn were used for asset accumulation, about 18 per cent of equity withdrawn was mainly used for consumption. This equated to about 2.5 per cent of aggregate household consumption in 2004. More than half of households who withdrew equity by increasing debt on their existing property, and identified a specific use of those funds, used the funds mainly for consumption purposes. Expenditure on motor vehicles, consumer durables and housing redecorations were most prominent. Equity withdrawal was also used to finance renovations, and although this does not count as consumption it would have further boosted aggregate demand. Equity withdrawal grew strongly between 2001 and 2003, and seems to have been an important contributor to consumption growth outpacing income growth during the period (Schwartz et al 2006).

Maclennan and Tu (1998) investigated the 1989 to 1993 economic downturn for several UK regions. The study found that greater non-housing wealth served to insulate households from the downturn, making them less likely to reduce consumption or postpone the purchase of durable goods. Perceived reductions in wealth due to falling housing prices were associated with reduced consumer spending on discretionary items such as entertainment, eating out and holidays, and postponement of durable goods purchases. The *perceived* impacts on housing equity were much more important for explaining consumption change, than were measured changes in net housing equity.

Another UK study by Campbell and Cocco (2004) concludes that changes in regional house prices impact on the consumption levels of households in the region. An increase in the value of the house by £1000 would be expected to lead to an increase in annual consumption of about £80, reflecting a marginal propensity to consume (mpc) out of housing wealth of about 0.08 for homeowners.

Bover (2005) reports an mpc out of housing wealth of 0.015 for Spain in 2002, with the effect being higher for the main residence than other properties. Consumption

out of financial wealth was not significant. For Italy, Grant and Peltonen (2008) find that the mpc out of self-reported changes in housing wealth is 0.08, compared to less than 0.01 for changes in the value of equities. Guiso et al (2006) also find that equity price changes have a negligible impact for Italian households, but the mpc out of real housing capital gains is estimated at 0.02 across all Italian households, and 0.035 for homeowners. A study covering Canada, Italy and Finland by Sierminska and Takhtamanova (2006) report that the mpc was consistently higher for housing wealth than for financial wealth, while Bostic et al (2005) reports similar findings for US homeowners. These findings contrast with those of Dynan and Maki (2001) that US households with less than $100 000 of equities have an mpc from capital gains in equities of 0.05–0.15.

US evidence suggests the consumption impacts of changes in house prices are greater when house prices are falling than when they are rising, perhaps because capital losses are generally unanticipated (Engelhardt 1995, Skinner 1993). For the UK, Disney, Gathergood and Henley (2007) identify a disproportionately large increase in consumption when house price inflation lifts households out of a negative equity situation.

The international micro evidence suggests the mpc out of housing wealth lies between 0.01 and 0.08, but it is not clear if changes in stock market wealth impact on consumption. In Australia, consumption was significantly boosted by housing equity withdrawal in the early 2000s and many low income households have been able to support higher levels of consumption by drawing on wealth.

Macro evidence

Dvornak and Kohler (2007) review international macro estimates of the mpc out of wealth, reporting a range of 0.03–0.07 for the US, 0.05–0.08 for Canada and 0.02–0.04 for the UK. Recent Australian time series studies of how aggregate consumption reacts to variations in household wealth are outlined below.

Tan and Voss (2003) find that financial and non-financial assets have distinctly different effects on consumption. Shocks to financial wealth have rapid overshooting effects on consumption, but in the long-run changes in non-financial wealth appear to be of greater consequence. The above trend growth of wealth in the late 1990s was an important contributor to consumption growth. Between 1997 and 1999 the rate of consumption growth ranged from 2.3–3.3 per cent per annum, while wealth grew by 8.0–10.0 per annum. A counterfactual experiment implies that, if wealth grew at its long term average of 3.9 per cent in real terms for each of those years, consumption growth would have been much lower, ranging from 1.3–2.0 per cent across the three years (Tan and Voss 2003). A related paper by the same authors estimates the mpc out of wealth at 0.04 in the long-run (Tan and Voss 2000), while Bertaut (2002) reports an estimate of 0.05 and McKibbin and Richards (1988) estimate that about two per cent of wealth is consumed per year.

Fisher and Voss (2004) find no long-run relationship between consumption, income and wealth for the 1977 to 2003 period. The authors argue that the surge in wealth in the early 2000s was largely viewed by consumers as transitory and elicited no substantial consumption response. '[C]onsumers have already factored into todays

consumption the expectation of a downward correction in household net wealth' (ibid, p. 371).

Multicollinearity issues that appear to have affected earlier studies, such as Tan and Voss (2003), are addressed by Dvornak and Kohler (2007) using a panel of the five largest Australian states between 1984 and 2001. They find that the mpc out of stock market wealth is 0.06–0.09 in the long-run, compared to 0.03 for housing wealth. The housing wealth mpc declines when the analysis period is extended to 2005. Nevertheless, because housing assets are so dominant in the wealth portfolio of Australian households, a 1 per cent increase in housing wealth has at least as large an effect on consumption as a 1 per cent increase in stock market wealth. One of the only other studies of the regional relationship between consumption and wealth was undertaken by Case, Quigley and Shiller (2001) for US states. It finds that housing wealth had a larger effect on consumption than financial wealth.

The Treasury (2005) also recognises that growth in household wealth, arising in large part from capital gains on housing assets in the late 1990s and early 2000s, has supported rapid growth in consumer spending. However, Australian households have not fully exploited all of the consumption possibilities offered by this increase in wealth. In the last few years, house price growth has slowed, and the implications for consumption were acknowledged in the *2006–07 Budget*:

> 'Household consumption growth is expected to remain moderate, as households continue to experience a period of weaker growth in dwelling wealth.' (Australian Government 2006, p. 3–3)

There are several cross-country studies of the relationship between consumption and wealth which have considered Australia. Ludwig and Sløk (2004) examined 16 OECD countries, and found a significant mpc out of stock market wealth for Australia (0.023). This is identical to the Canadian estimate, but higher than the estimates for the UK, US, Japan, France and Germany. Catte et al (2004b) found that wealth significantly influences consumption in all 10 of the OECD countries considered. For Australia, the long-run mpc out of housing wealth (0.07) exceeded that for financial wealth (0.03). The Australian results closely resembled those for Canada, the UK and the US. The model was extended to include a measure of housing equity withdrawal, which was significant for Australia, and seemed to capture most of the impact of housing wealth on consumption. The long-run mpc out of housing equity withdrawal was estimated to be 0.63 for Australia. However, Klyuev and Mills (2006) found no significant mpc from housing equity withdrawal for Australia.

Farm equity withdrawal is another potential channel through which household wealth could impact on consumption in Australia. For New Zealand, Smith (2006) provides indicative estimates which suggest that the mpc ranges from 0.40 to 0.70 of the amount of farm equity withdrawn.

In summary, both housing and financial wealth have positive and significant effects on consumption in Australia. The sheer magnitude of house price increases since 1998 has substantially boosted consumption, and prompted particularly strong consumption growth between 2003 and 2005 (Australian Government 2006). The long-run mpc out of total wealth appears to lie between 0.02 and 0.06 for Australia.

New regional evidence

Consumption data is not readily available at a small area scale in Australia, and so this section explores the relationship between income, consumption and wealth for capital cities and state balances. The analysis is based on the ABS' 2003–04 SIH and *Household Expenditure Survey (HES)* CURFs and uses the following measures:

- mean weekly equivalised disposable household income
- mean weekly equivalised expenditure on goods and services (which excludes repayments of mortgage principal and other types of capital expenditure)
- mean equivalised net worth.

All three measures were equivalised using the OECD equivalence scale, which was outlined in Chapter 9.

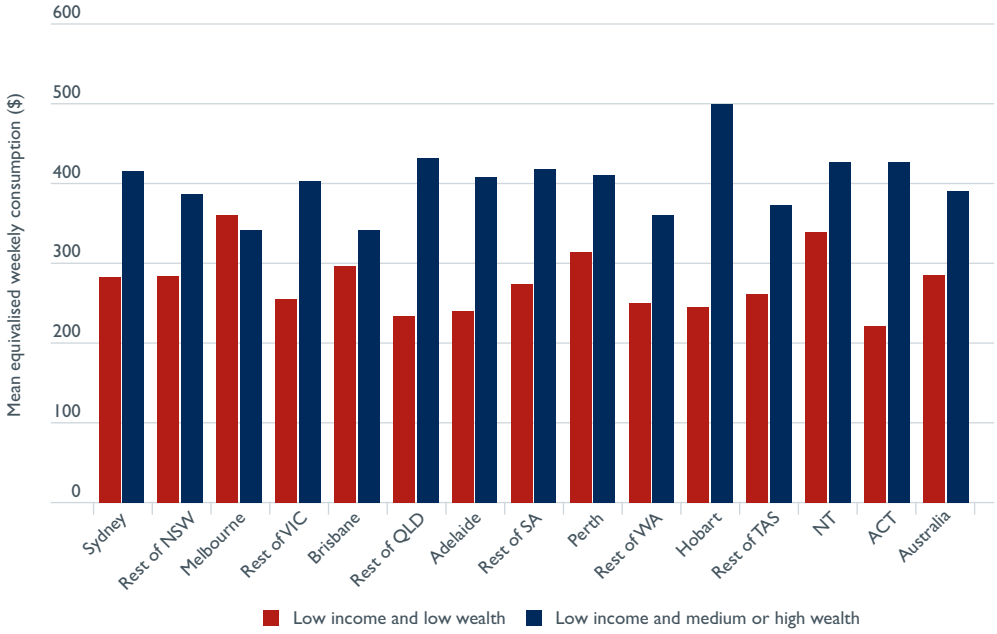
Nationally, disposable income exceeds consumption by about 3 per cent (ABS 2007b). Disposable income exceeds consumption by small amounts in most of the capital cities and state balances—the exceptions are regional NSW, Brisbane, Hobart and Perth where consumption exceeds income by 0–5 per cent. The four regions in which consumption exceeds income could potentially be drawing down assets or increasing borrowing, but the point in time snapshot provided by the SIH and HES does not enable wealth dynamics to be investigated.

According to ABS (2007b), wealth has an important influence on consumption for low income households. Low income households have been identified in each capital city and state balance using a cut-off of half the national median equivalised disposable income. This is where the poverty line is most commonly drawn (Marks 2007). Similarly, the cut-off for low net worth was set at half the national median equivalised net worth. The estimated proportion of low income households varied from 9 per cent for regional Queensland and regional WA to 22 per cent for regional Tasmania. The proportion of low wealth households varied from 26 per cent for Melbourne and the ACT to 46 per cent for the NT.

Nationally, low income low wealth households had much lesser consumption than low income households with medium or high wealth, although consumption exceeded income for both groups. Figure 10.10 reveals that this pattern was repeated for all capital cities and state balances, except for Melbourne, where the low income low wealth group had relatively high consumption. For low income households, consideration of both income and wealth provides a much better explanation of consumption expenditure, than relying on income data alone.

Chapter 11 contains some further exploration of the wealth effect on consumption in regional economies. The case study of Tasmania provides some insight into how rising wealth, due to increasing house prices, contributed to abnormally high consumption growth in that state during the early 2000s.

Figure 10.10 Impact of wealth on consumption for low income households, capital cities and state balances, 2003–04



Notes: Low income is defined as half the national median weekly equivalised disposable income. Low wealth is defined as half the national median equivalised net worth.

Source: BITRE analysis of ABS' 2003–04 SIH and HES CURFs.

Summary: wealth and consumption

Both housing and financial wealth have positive and significant effects on consumption in Australia, with between two and six cents of every extra dollar of household wealth being consumed. The wealth effect is most apparent for low income households, as many have been able to support higher levels of consumption by drawing on their wealth. The large capital gains on housing in the early 2000s appear to have boosted consumption growth between 2003 and 2005, at least in part through increased withdrawal of housing equity.

Wealth and economic security

The degree to which a person's economic future is secure is a key element of their economic wellbeing (Osberg and Sharpe 2002).

> 'Wealth confers economic security, and this is a high priority for many people. It enables a household to tide over bad times due to, for example, unemployment or ill health, when the normal flow of earned income is reduced or cut off. Wealth also enables a household to gain access to credit so it can borrow either to tide over bad times, or invest for the future' (Headey, Warren and Wooden 2008)

Osberg and Sharpe (2002) measure economic security based on risks of unemployment, illness, family breakup and poverty in old age. Others measure economic security based on income variability (e.g. Carroll and Samwick 1995a).

People generally prefer to avoid risk and save to insure against it—this is referred to as precautionary saving. Precautionary wealth refers to the gap between the amount of wealth people would hold in the absence of uncertainty and that which is held in the presence of uncertainty. Kennickell and Lusardi (2005) analyse survey data on the desired amount of precautionary wealth, finding it accounts for about 8 per cent of US wealth holdings.

The following pages review the literature addressing the relationship between wealth and economic security. Most studies focus on how wealth is used to insure against or cope with particular types of risk, such as income uncertainty or job loss, health risk, drought or natural disaster. Each risk is considered, in turn, below. The section concludes with some new analysis about the relationship between income uncertainty and wealth in Australia's regions.

Income uncertainty and job loss

In periods of rising unemployment, economic insecurity is of wide concern (Osberg 1985). Unemployment leads to significant income reductions and reduces a person's ability to maintain or accumulate wealth, although income support payments help mitigate the financial effects. Carroll, Dynan and Krane (1999) link increases in unemployment risk with greater net worth for middle and high income US households, but there is no evident effect for low income households. For median income households, a one percentage point rise in the probability of becoming unemployed increases wealth by an amount equivalent to three and a half months income.

Engen and Gruber (2001) make use of US interstate variation in unemployment benefit replacement rates to test for evidence of precautionary saving. They conclude the precautionary motive is an important determinant of saving and a higher replacement rate crowds out private savings, particularly for those with a high risk of unemployment. However, empirically the effect is not large.

Guariglia (1998) provides evidence that saving decisions in the UK are strongly affected by the probability of job loss and variation in earnings. People tend to save more when they expect their financial situation to deteriorate. People also reduce the proportion of wealth allocated to risky assets when they face greater income risk (Cardak and Wilkins 2008).

Carroll and Samwick (1995a) find that wealth is systematically higher for those with greater income uncertainty in the US, and that holdings of liquid assets are most responsive to income uncertainty. Rather than starting to save for retirement very early in life, up until the age of 50 people try to maintain a modest target level of wealth which would help tide them over if faced with an income shock. Carroll and Samwick (1995b) estimate that between 39 and 46 per cent of household wealth can be attributed to differences in income uncertainty across households. Precautionary wealth accounts for a large proportion of the wealth of low income households, but its importance tends to decline as income rises.

Fuchs-Schündeln and Schündeln (2005) use German reunification as a means of testing the theory of precautionary savings. East German civil servants faced a much lower income risk than the rest of the population and had significantly less wealth than other households. There was clear evidence that risk averse individuals self-selected into low risk occupations, which significantly reduced the amount of precautionary wealth. Nevertheless, controlling for self-selection, about 21 per cent of wealth was due to precautionary motives. Similarly, Bartzsch (2006) concludes that about 20 per cent of German financial wealth is due to precautionary saving against income uncertainty.

However, the empirical evidence is mixed, with Kennickell and Lusardi (2005) finding that a relatively small amount of precautionary saving relates to earnings and unemployment risk. Guiso et al (1992) and Arrondel (2002) also find only small effects. Hurst et al (2005) note that these studies have typically excluded business owners and/or business assets. They argue that previous studies which have assigned a large role to precautionary savings (e.g. Carroll and Samwick 1995a, 1995b), have incorrectly done so by pooling together business owners and non-business owners. Hurst et al (2005) conclude that precautionary saving accounts for less than 10 per cent of wealth. Kennickell and Lusardi (2005) report that US business owners have a particularly strong precautionary motive, accounting for 24 per cent of desired precautionary savings but just 11 per cent of the population.

Overall, it appears households do accumulate wealth to insure against income uncertainty and job loss, but the amount of precautionary wealth is reasonably modest.

Health risk

Numerous studies have investigated the relationship between health risk and wealth, particularly for the US. Palumbo (1999) argues that uncertainty regarding future medical and nursing home expenses provides an important precautionary motive and contributes to elderly US households maintaining relatively high levels of wealth during the early years of retirement. Kennickell and Lusardi (2005 p. 29) conclude that, 'relative to other risks, it is health risk that gives rise to the largest amounts of precautionary savings overall'.

Some studies have found that those with private medical insurance tend to have higher saving than those without, suggesting that higher levels of health risk do not induce precautionary savings (Guariglia and Rossi 2004, Starr-McCluer 1996). However, Chou et al (2003) outline how the introduction of comprehensive health insurance in Taiwan led to a savings reduction of 8.6–13.7 per cent. Thus, prior to its introduction, there was considerable precautionary saving to self-insure against health risks.

Coile and Milligan (2006) find that health shocks play an important role in explaining changes in the wealth of the elderly in the US. Death of a spouse, acute health shocks (e.g. heart attack, cancer diagnosis) and chronic health shocks (e.g. diabetes diagnosis) all have similar effects. Each eventually lead to lower home, vehicle, business and other real estate ownership, although death of a spouse tends to have more immediate effects. Each lead to a significant increase in the share of assets held in bank accounts and certificates of deposit. The authors find no evidence this portfolio

reallocation occurs to finance medical expenses. Rather, physical impairments and difficulties managing money seem to be an important reason for selling assets.

Lee and Kim (2007) also investigate the impact of health on the wealth of the elderly in the US, noting that existing chronic health conditions are associated with persistent wealth depletion. The authors conclude older people need precautionary savings to alleviate the financial burdens of illness.

Smith (2005) considers a US sample of people in their fifties, finding that major health shocks lead to substantial reductions in wealth because of the impact the health shock has on labour supply. '[T]he principal risk people face when poor health arrives is not the medical expenses they must pay but rather the currently not fully insured loss of work and income' (ibid p. 9).

Cai (2006) examines the effect of wealth on health transitions for older Australians. Wealth has a significant effect on the transition from good health to poor health—thus, wealthy people are much less likely to experience such a transition than people at the bottom of the wealth distribution. In contrast, Smith (2005) finds that wealth does not impact on future health outcomes in the US.

Households in poor health are less likely to hold risky financial assets (Rosen and Wu 2004, Edwards 2008, Guiso et al 1996). In the US, having supplemental insurance (i.e. not solely relying on Medicare) significantly increases holdings of risky assets (Goldman and Maestas 2005).

The weight of evidence suggests that people accumulate wealth to self-insure against future health risk, and that wealth depletion and shifts to safer asset portfolios tend to occur in the aftermath of health shocks.

Drought

Alston and Kent (2004) studied the social impacts of drought in Bourke, Condobolin and Deniliquin. To cope with the loss of income, many farm families had substantially increased their debt levels, through new loans, overdraft extensions or increased reliance on credit cards. Other farmers were selling their remaining assets, such as livestock and shares. Most farmers had reduced equity as a result of the drought. The study therefore provides evidence that farming families are using their wealth to partially offset the reduction in living standards caused by dramatically lower incomes.

DOTARS (2005) also investigates the 2002–03 drought, focusing on the flow-on impacts on the communities of Roma and Temora, rather than the impacts on farmers themselves. The key finding is that the community impacts of drought have been buffered by improved farm financial management practices and the ability of farm businesses to borrow against the asset value of their properties. One of the big differences compared to previous droughts was the increased land values, which allowed more borrowing from banks, and helped to maintain local spending levels.

With respect to the 2006–07 drought, ABARE (2007 p. 18) notes there are 'signs that farms are choosing to meet their short term funding needs by accessing their accumulated portfolio of liquid assets including 'farm management deposits''. More generally, ABARE (2007) argues that the adaptive capacity of farm households depends, in part, on the diversity of the household's assets.

Natural disasters

Natural disasters often destroy assets and negatively impact on the security of people's livelihood. Regions with lower levels of wealth can be more vulnerable to natural disasters. This is especially the case in disadvantaged communities that cannot afford risk reduction measures or that cannot afford to move to lower risk areas (Emergency Management Australia 2002). Dwyer et al (2004) find that home ownership plays a significant role in determining the vulnerability of individuals to risk from natural hazards, but car ownership and debt are of minor importance.

The vulnerability associated with low levels of wealth is illustrated by Carter et al (2004) who analysed the impacts of Hurricane Mitch on the asset holdings of Honduran households. About 44 per cent of households suffered a loss of productive assets, such as plantations or livestock. Amongst households which suffered an asset loss, the poorer households lost a much greater proportion of their wealth. The wealthy households did not need to draw down assets to maintain consumption after the shock, but asset poor households were 'put on a downward trajectory of further asset depletion' (ibid p. 32) and the rebuilding process was very slow.

Research into the Canberra bushfires notes that communities with a higher degree of self-determination are better able to recover (Camilleri et al 2007). Self-determination can be enhanced by greater levels of wealth, which can provide greater choice and an improved capacity to organise recovery needs. Handmer and Hillman (2004) argue that, in recovering from natural disasters, the priority should be on maintaining local economic flows, rather than asset restoration. The priority for asset protection and recovery should be assets that generate income, such as fruit trees and natural assets in tourism regions. Similarly, Handmer (2008) argues that household wealth itself is not particularly important for recovery, but high levels of debt can reduce recovery prospects.

In summary, households and communities with low wealth can be especially vulnerable to natural disasters.

New evidence for Australia's regions

Studies investigating the relationship between wealth and economic security are almost uniformly undertaken at the individual or household scale. These studies suggest that some wealth is accumulated to insure against different types of risk, and that wealth is commonly used to maintain adequate living standards when shocks occur.

There is little evidence as to whether these findings translate to regions. Risks of natural disaster, drought and unemployment certainly vary across regions, as does the degree of income instability. Income variability data is commonly used to measure economic security (e.g. Carroll and Samwick 1995a, Guariglia 1998). Below we explore whether regions with greater income variability tend to accumulate greater wealth as an insurance mechanism.

The income instability index which is analysed below measures the extent of deviation of the RIPT time series around the long term trend for the region, over the 1990–91 to 2004–05 period. Following the method of BTRE (2003b) and Malizia and Ke (1993),

the index has a value of zero if the time series exactly follows a linear trend path, and takes a high value when a regional time series displays extreme movements, or when growth rates are well above or below the long-run trend for sustained periods.

Income instability and net worth per household are significantly positively correlated across the in-scope SLAs with more than 500 households[57], but the association is not overly strong (correlation coefficient=0.25). Further analysis revealed that the correlation was largely attributable to business assets, which are positively associated with income instability (0.53). When business assets are excluded from the calculation of net worth, the correlation with the income instability index is reduced to just 0.01. For Australia's regions, there is *no* evidence that greater amounts of wealth are accumulated in regions with highly variable incomes as insurance against income shocks.

The observation that business assets and income instability are closely linked across SLAs flows from the tendency for agriculturally based regions to have substantial business assets as well as relatively volatile incomes. While these business assets may not have been accumulated for precautionary reasons, evidence from the recent drought suggests that this wealth is used to maintain adequate living standards in the face of income shocks (Alston and Kent 2004, DOTARS 2005).

Summary: wealth and economic security

The available evidence indicates that wealth is used to insure against and cope with particular types of risk. People accumulate wealth to self-insure against future health risk, income uncertainty and job loss. Wealth helps to alleviate the financial burdens of illness and drought, with the aftermath of such shocks typically involving wealth depletion and shifts in portfolio composition.

Investigations of the relationship between wealth and economic security are almost uniformly undertaken at the individual or household scale. There is no evidence that greater amounts of wealth are accumulated in regions which face high degrees of risk.

Wealth, poverty and disadvantage

In recent years, a number of studies have used the SIH and HILDA to investigate how wealth relates to poverty and financial hardship for Australian households.

Marks (2007) examines financial disadvantage among Australians using HILDA, considering income poverty, subjective poverty and financial stress. Income poverty is defined as equivalised household disposable income of less than 50 per cent of the national median. Subjective poverty is based on whether people describe themselves as poor or very poor. Financial stress relates to the incidence of cash flow problems due to a shortage of money (e.g. went without meals, could not pay utility bills on time). Those in income poverty generally had substantial asset holdings, averaging about $240 000 per household, but wealth was twice as high for those not in income

57. Five ACT SLAs with more than 500 households were excluded as the SLAs contained no taxpayers in the early 1990s, and so the income instability index could not be derived.

poverty. The average wealth of those in subjective poverty was much lower, at around $100 000 per household, while wealth averaged about $140 000 across households in financial stress. The three dimensions of financial disadvantage were not closely aligned. Wealth was found to be more closely linked to subjective poverty than to financial stress or income poverty. Subjective poverty is a psychological judgement which gives greater weight to wealth than income.

Headey (2008) discusses how HILDA data on income, consumption and wealth can potentially provide the basis for a much improved assessment of poverty for Australian households. The analysis highlights the role of wealth in helping people see their way through periods of low income, without falling into poverty.

Breunig and Cobb-Clark (2006) investigate financial stress for Australian families, finding that greater wealth reduces the incidence of financial stress, even after controlling for income. Home ownership also reduces the incidence of financial stress.

Several US studies have incorporated wealth information into the assessment of poverty. Caner and Wolff (2004) assessed whether people were in asset poverty based on whether wealth was sufficient to meet basic needs for a three month period. Asset poverty was two to four times as high as income poverty, depending on how wealth was defined, and was highly persistent over time. The income poverty rate of 11.8 per cent was reduced to 9.1 per cent based on wealth adjusted income. Lerman and Mikesell (1988) and Weisbrod and Hansen (1968) both found that about 90 per cent of the income poor were assessed as being in poverty based on wealth-adjusted income. While consideration of wealth reduces poverty rates by a modest amount, it does substantially reduce the representation of retirees, homeowners and farmers amongst the poor (Lerman and Mikesell 1988).

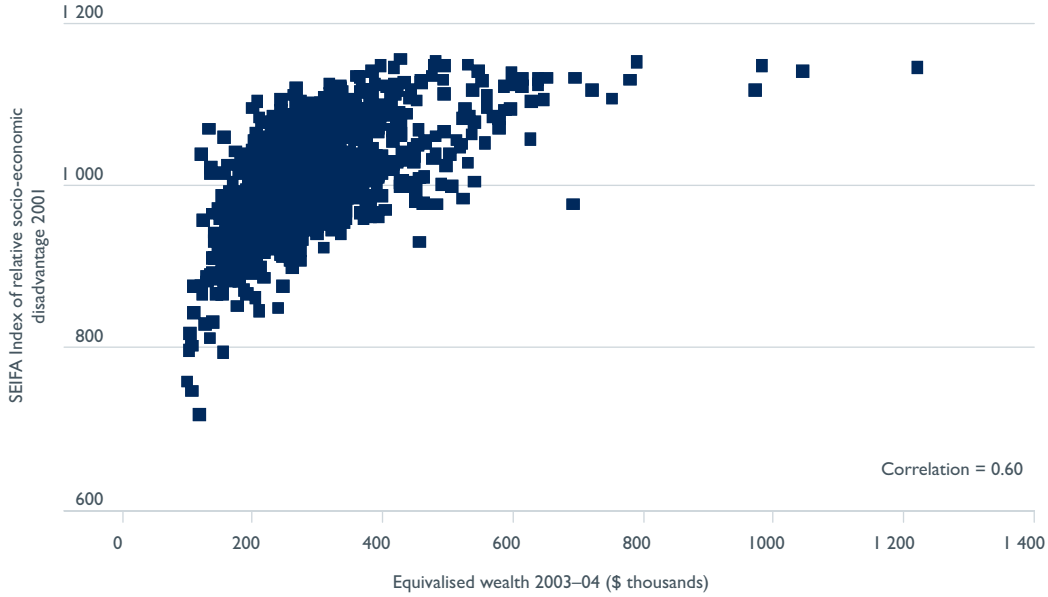
At a regional scale, Baum et al (2005) and Sorensen (2004) have investigated the relationship between socioeconomic disadvantage and the extent to which residents of a region hold financial assets. Sorensen (2004) concludes the ABS' SEIFA index of disadvantage provides a somewhat different picture than his financial wealth measures. A greater degree of regional disadvantage tends to be associated with less financial assets, but the relationship is of only moderate strength. A number of suburban Canberra SSDs record very low levels of disadvantage, yet have financial asset holdings which are similar to some of Australia's most disadvantaged SSDs. Baum et al (2005) used cluster analysis to develop a set of typologies of Australian SLAs. ATO data on interest income and dividend imputation credits proved important in differentiating particular types of advantaged and disadvantaged localities. For example, the 'old-economy extremely disadvantaged localities' (e.g. Elizabeth SA, Fairfield NSW, Ipswich QLD, Broadmeadows VIC) were distinguished by very low financial assets as well as their labour force and occupational structure.

The regional relationship between wealth and disadvantage can be explored empirically by examining the relationship between BITRE's equivalised household wealth measure and the ABS' SEIFA indices across SLAs. The SEIFA index of relative socioeconomic disadvantage is the most relevant comparison point for this purpose.

Figure 10.11 plots the relationship between the 2001 SEIFA index of disadvantage and equivalised household wealth in 2003–04 for all in-scope SLAs containing more than

500 households. The relationship is reasonably strong with a correlation coefficient of 0.60. The relationship is positive, but non-linear, flattening off at higher levels of wealth. More disadvantaged regions tend to have relatively low wealth holdings, and vice versa.

Figure 10.11 Relationship between equivalised wealth and SEIFA index of disadvantage, SLAs



Note: The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities.

Source: BITRE analysis of BITRE *Household Wealth Database* and ABS 2001 SEIFA Index of relative socioeconomic disadvantage.

Equivalised wealth is more closely correlated with the SEIFA disadvantage index than with the 2001 census measure of equivalised household income (correlation = 0.47). As shown in Figure 10.3, the ATO income measure is more closely linked to wealth, but the correlation drops off markedly when the top wealth decile is excluded. In contrast, the correlation between wealth and the SEIFA index of disadvantage remains basically unchanged when the top wealth decile is excluded (0.58). Thus, at the regional scale, wealth and disadvantage have a stronger and more consistent relationship than do wealth and income.

There are some regions which do not fit the overall pattern:

- Generally speaking, agriculturally-based regions tend to rank more highly in terms of equivalised wealth than on the SEIFA disadvantage index. Lake Grace, Gnowangerup and Boyup Brook in WA's wheatbelt have high wealth, but score below 1000 on this SEIFA index. Regions such as Walgett, Brewarrina and Coonamble in NSW's north west rank very poorly on the SEIFA disadvantage index but do somewhat better in terms of wealth, because local farmers with substantial business assets greatly boost the regional average.

- The Sydney SLAs of Fairfield and Auburn and the Melbourne SLA of Greater Dandenong Balance also rank much more highly in terms of wealth than on the SEIFA index of disadvantage.
- While the Canberra suburbs of Chapman, Aranda and Weetangera are amongst the least disadvantaged in the nation, they do not have particularly high equivalised wealth.
- The Palmerston SLAs in Darwin have very low equivalised wealth, but score above average on this SEIFA index. The combination of low wealth and low disadvantage stems from the youthful age structure of these SLAs and is consistent with the earlier finding that residents have accumulated a relatively large amount of wealth for their age.

High wealth and high disadvantage or low wealth and low disadvantage may occur together in the same region for several reasons. Firstly, wealth is only one element of socioeconomic wellbeing—other elements, such as income, education, housing and labour force participation, can present a rather different picture of disadvantage. Secondly, measures of average wealth (or income) can potentially hide significant pockets of disadvantage. This highlights the importance of considering poverty or equity measures, in addition to measures of average wealth and income, when assessing regional economic wellbeing.

Wealth is linked to poverty, financial hardship and disadvantage for Australian households and regions. Wealth plays an important role in protecting households from financial hardship. People's subjective judgements of whether they are poor give greater weight to wealth than income. While poverty measurement is traditionally based on income data, consideration of wealth information has the potential to provide an improved assessment of poverty for Australian households and regions.

Summary

Wealth is a key element of regional economic wellbeing. Wealth benefits overall economic wellbeing through enabling increased consumption opportunities, generation of income flows and increased economic security. Wealth also protects against financial stress and poverty.

This chapter reveals that income and wealth are not interchangeable as indicators of regional economic wellbeing, and often provide contrasting signals. Some low income regions have significant wealth holdings which enable residents to enjoy a relatively high standard of living. Consideration of wealth data alongside income data can provide a much better explanation of consumption, financial stress and poverty. Reliance on regional income data is also likely to understate the extent of regional disparities in economic wellbeing. Consequently, BITRE's newly available regional wealth information has the potential to provide an improved understanding of spatial differences in disadvantage and economic wellbeing across Australia.

Key messages

Economic wellbeing is a multidimensional concept—income, wealth, consumption, economic security, the cost of living, poverty and inequality are key elements.

Much of the strength of the association between regional wealth and regional income derives from their strong connection for the wealthiest areas of our capital cities. When the top wealth decile is excluded, the relationship between wealth and income is weak. For regional Australia, there is no such relationship.

Income and wealth are not interchangeable as indicators of regional economic wellbeing and often provide quite different signals. The income and wealth rankings differ by more than 500 places for about 20 per cent of Australian SLAs.

The wealth and income data tend to provide contrasting messages for regions which have a particularly old or young age structure.

Mining communities typically perform much better in terms of income than they do in terms of wealth. Reliance on income data alone is likely to overstate their economic wellbeing.

High wealth and low income is a feature of many rural regions and sea change communities. Income data can imply these regions are relatively disadvantaged, but the wealth data suggests their substantial wealth holdings can be used to support consumption and maintain lifestyle.

Wealth varies more widely across regions than income does. Thus, reliance on regional income data may understate the extent of regional disparities in economic wellbeing.

In Australia, between two and six cents of every extra dollar of household wealth is consumed. The large capital gains on housing in the early 2000s appear to have significantly boosted consumption growth.

Many low income households have been able to support higher levels of consumption by drawing on their wealth.

People accumulate wealth to self-insure against different types of risk and to cope with the aftermath of shocks.

Wealth serves to protect households from financial stress, poverty and disadvantage.

At the regional scale, wealth and disadvantage have a stronger and more consistent relationship than do wealth and income. High wealth regions generally have low levels of disadvantage.

Usage of wealth data alongside income data enables a more comprehensive and informed assessment of regional economic wellbeing.

Chapter 11 Database and case studies

This chapter outlines the contents of BITRE's *Household Wealth Database*, which accompanies this information paper. It also includes three regional applications of this database. The Tasmanian case study draws on BITRE's recent investigation of Tasmania's economic development (BITRE 2008c) to provide insight into the potential impact of rising household wealth on consumption in a region. The two remaining case studies focus on Augusta-Margaret River (WA) and Gladstone (QLD). These regions were selected for further investigation as they are regions in which the income and wealth data present a contrasting picture of economic wellbeing.

Household Wealth Database

BITRE's *Household Wealth Database* is an Excel workbook which can be downloaded for free from <www.bitre.gov.au>. It contains the 2003–04 regional estimates of net worth per household and its components.

The database contains wealth estimates for all in-scope SLAs with more than 500 households. Very remote SLAs and discrete indigenous communities are out of scope. The database also contains estimates for all in-scope LGAs with more than 500 households and for the in-scope parts of all Australian SDs. National, state, territory, capital city, state balance, urban centre size and remoteness class estimates are included for benchmarking purposes. All regions have been defined based on 2001 ASGC boundaries.

The following BITRE estimates are made available for these regions[58] for 2003–04:

- estimated number of households
- net worth per household
- equivalised net worth per household
- aggregate net worth
- assets per household
- liabilities per household
- debt-to-asset ratio
- owner-occupied property assets per household
- outstanding loans on owner-occupied property per household
- net owner-occupied property assets per household
- net other property assets per household

58. There are some exceptions where the detailed wealth component information has been suppressed due to concerns about reliability. For example, estimates of net business assets per household have not been published for SLAs in regional WA. See Chapter 3 for a discussion of data quality issues.

- net vehicle assets per household
- interest earning assets per household
- superannuation assets per household
- share and trust assets per household
- dwelling contents per household
- net business assets per household;
- average owner-occupied property value
- income per taxpayer.

The database also includes a range of other complementary ABS census data items at the SLA scale, namely:

- average household size, 2001
- average number of adults per household, 2001
- average number of children per household, 2001
- median age, 2001
- median weekly household income, 2001
- proportion of households who own the home in which they live (with or without a mortgage), 2001
- proportion of households with an outstanding mortgage, 2001
- proportion of households with at least one vehicle, 2001
- proportion of employed persons who are employers or self-employed, 2001.

In addition, the database contains data quality flags and a range of descriptive information about the underlying information sources, methodology and quality of estimates.

BITRE's *Household Wealth Database* provides a valuable information source on spatial differences in the wealth of Australian households. It can be used to develop a profile of wealth in a particular region or to undertake regional comparisons. Through linkage with other regional information sources, such as BITRE's *Taxable Income Database* (BITRE 2008a), a richer understanding can be gained of differences in regional economic wellbeing. When linking the net worth estimates with other data sources, care should be taken to ensure the analysis is not simply replicating the models on which the small area estimates are based. For example, any analysis of how wealth is related to house prices at a regional scale, will find a relationship exists because that relationship forms the basis of the underlying models.

Tasmania

BITRE has recently published an in-depth investigation of the drivers of Tasmania's economic performance over the 1985 to 2005 period (BITRE 2008c). The study found that increased wealth is one of several factors which have contributed to Tasmania's

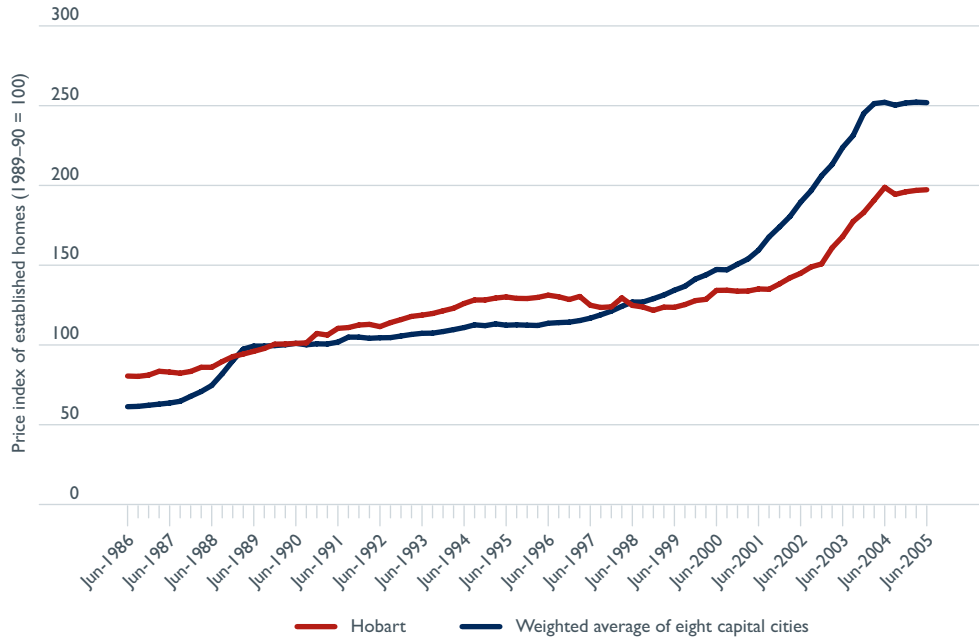
improved economic performance this decade. The contribution of wealth to Tasmania's recent economic growth is the focus of the remainder of this section.

A number of comparisons can be made between household wealth in Tasmania and Australia in 2003–04 (ABS 2006b):

- Average household wealth for Tasmania stands at $324 000, which is much lower than the national average of $467 600 per household.
- The financial assets of Tasmanian households are much lower than those of Australian households, at $94 500 and $136 500 respectively. This reflects lower holdings of most types of financial assets.
- Tasmanian average liabilities are relatively low at $35 400, compared to the national average of $69 400 per household.
- The net average value of owner-occupied property assets is $260 000 for Australia, which is much higher than the Tasmanian average of $155 100. This gap is largely attributable to owner-occupied housing, but Tasmanians also have lower holdings of other property assets.

Property assets are the largest component of household wealth and experienced rapid growth this decade. Figure 11.1 illustrates the slower growth of property prices for Hobart between 1985 and 2002. Rapid growth in Hobart's housing market is evident after 2002, matching the rise in national prices. Australia's and Hobart's house price growth has leveled off since 2004. APM data reveals that the largest increase in Tasmanian house prices between 2002–03 and 2004–05 was in Greater Hobart, with price growth being much less for Launceston and Burnie-Devonport.

Figure 11.1 House price index, Hobart and eight capital cities, 1986 to 2005



Note: 1989–90 has been set to 100.

Source: ABS Cat. 6416.0

The recent improvement in net migration flows into Tasmania can be linked to house prices. People were attracted to Tasmania, particularly young families and retirees, because of the availability of affordable housing (Tasmanian Department of Treasury and Finance 2003).This would have put upward pressure on Hobart's house price. A likely effect of the house price increases would be a reduction in arrivals from the mainland, curtailing the positive net migration flows. However, even with the growth in house prices for Tasmania, 'whether you are renting or buying, [house prices] are amongst the lowest in Australia. Houses in Tasmania's capital, Hobart, are on average half the price of a home in Sydney' (Tasmanian Department of Economic Development 2007 p. 1).

Since 2001, Tasmanian investment in housing has substantially increased. Low interest rates, the lower price of similar quality Tasmanian housing (relative to Australia) and migration to Tasmania all contributed to this result. Dwelling investment is responsible for 34.8 per cent of growth in GSP between 2001–02 and 2003–04 (BITRE 2008c). Housing investment has had a relatively higher impact on Tasmania's economic growth than on national economic growth. To the extent this housing construction and renovation has been undertaken by Tasmanians it would be reflected in the state's household wealth.

The links between wealth and consumption are well established and were summarised in Chapter 10. Households that have substantial wealth holdings can use their assets to support a higher standard of living. Both housing and financial wealth have been found to have positive and significant effects on consumption in Australia. National consumption was significantly boosted by housing equity withdrawal in the early 2000s. The sheer magnitude of house price increases prompted particularly strong consumption growth between 2003 and 2005 (Australian Government 2006). House prices have also risen sharply for Tasmania, and the increased value of owner-occupied property was the major contributor to the 25 per cent increase in Tasmanian wealth holdings between 2003–04 and 2005–06 (see Chapter 8).

Nationally, the wealth effect was most apparent for low income households, and many were able to support higher levels of consumption by drawing on their wealth. Figure 10.10 suggests wealth has a particularly strong effect on consumption for low income Hobart households.

Dvornak and Kohler (2007) estimate the long-run mpc out of housing wealth at 0.03. Hobart's average house price increased by $78 746 between 2002–03 and 2004–05, and given the home ownership rate of 73 per cent, this equates to an increase in owner-occupied housing wealth of over $58 000 per household.[59] Applying the mpc implies that in the long term this would increase consumption by about $1700 per Hobart household. Consumption per capita averaged $19 600 in Tasmania in 2002–03 (ABS 2007e), although it was most probably higher than this for Hobart residents, given their higher average incomes. Thus, an indicative calculation suggests the wealth increase may have induced a one-off rise in consumption of as much as 9 per cent for Hobart households.

Is there any evidence that such a large increase in consumption occurred in Tasmania? Figure 11.2 shows growth in Tasmanian household consumption per capita was particularly strong in 2003–04 and 2004–05. The growth rate in those two years was

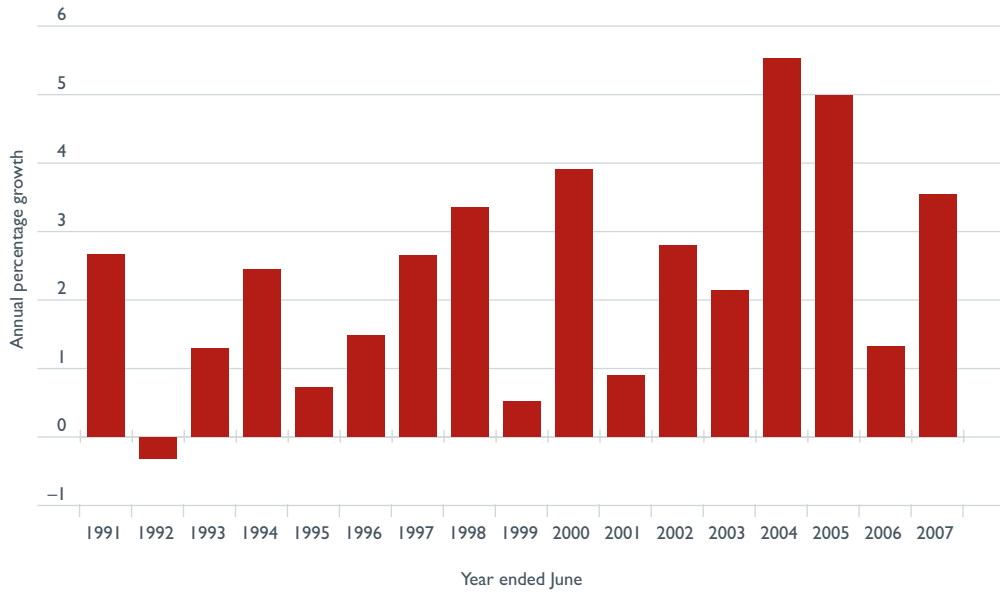
59. SIH data for 2003–04 and 2005–06 suggests the average Tasmanian household gained about $48 000 in owner-occupied housing wealth during this later period.

more than double the long-term average growth rate of 2.3 per cent. The data is certainly consistent with increased wealth substantially boosting the consumption of Tasmanian households during this period. However, the wealth effect on consumption does not appear to be as high as 9 per cent[60], perhaps because house prices rose by much less outside of Hobart.

According to BITRE (2008c), the increase in consumption expenditure was particularly due to spending on discretionary items such as: *purchase of vehicles; furnishings and household equipment; recreation and culture;* and *clothing and footwear*.

Increased wealth, migration and consumer confidence have all contributed to the increased consumption and changed spending patterns of Tasmanians during the recent economic upturn. The growth period illustrates a virtuous circle through increases in income, employment, expectations, consumption, investment, wealth and population. These factors have raised the level of economic activity in Tasmania providing a momentum to the growth. However, the growth of household income, wealth and consumption has failed to provide a foundation for future economic growth (BITRE 2008c).

Figure 11.2 Growth in per capita consumption (chain volume measure), Tasmania, 1991 to 2007



Source: ABS Cat. 5220.0

Augusta-Margaret River

Chapter 10 revealed that income and wealth were not well aligned for the Augusta-Margaret River SLA, with the wealth data providing a far more positive picture than regional income measures (see Table 11.1). It was suggested this may be a result of the

60. For Tasmania as a whole, between 2002–03 and 2004–05, growth in the chain volume measure of consumption per capita exceeded the long term average growth rate by about 6 per cent.

region possessing a mix of the characteristics of rural farming areas and sea change regions. This section investigates the issue in greater depth.

Table 11.1 Wealth and income, Augusta-Margaret River and Australia

Indicator ($)	*Augusta-Margaret River*	*Australia*
Net worth per household 2003–04	544 300	467 600
Median weekly household income 2001	662	782
Median weekly household income 2006	922	1 027
Income per taxpayer 2003–04	33 741	43 050

Source: BITRE *Household Wealth Database*, BITRE *Taxable Income Database*, ABS *Census of Population and Housing* 2001 and 2006.

Situated some 260 kilometres south of Perth the townships of the Augusta-Margaret River region began as a chain of timber felling and dairying settlements, but have developed, since the late 1960s, into a centre for wine production and tourism. Tourism Western Australia (2004) estimate that 550 000 people visit the region annually to partake in a number of activities, including surfing, whale watching, wine tasting and bushwalking. The region also commands 20 per cent of Australia's premium wine market (Margaret River Wine Association nd).

Unlike other non-metropolitan high wealth SLAs, Augusta-Margaret River has a relatively young population, with a median age of 35. This is due to the region having a relatively small population in the 15–24 and over 50 age groups, and an above average population share aged between 25 and 49. The main drivers of this unusual structure are migration patterns, a lack of higher education facilities and an absence of aged care services, which push both young adults and older people to the larger nearby centres.

Even though a relatively low income is observed, the reliance on income support payments is similar to the national average (BITRE forthcoming). The low proportion of older people in the population is one of the principal reasons for this. BITRE's *Cost of Remoteness* study (BITRE 2008b) indicates that the cost of living is about 11 per cent higher than the capital city average in Margaret River—housing costs are relatively high, while clothing and household furnishing and equipment are particularly expensive. Thus, not only are incomes relatively low, but the buying power of those incomes is limited by the region's above average cost of living.

As a major tourist destination for domestic and overseas visitors it is not surprising to find that many retail, accommodation, restaurant and café businesses are present in the townships of the Augusta-Margaret River region. More than 26 per cent of the SLA's employment is supplied by these types of businesses (see Figure 11.3). Sales and hospitality workers are predominantly casual or part-time, unskilled and low paid, partially explaining the existence of low incomes.

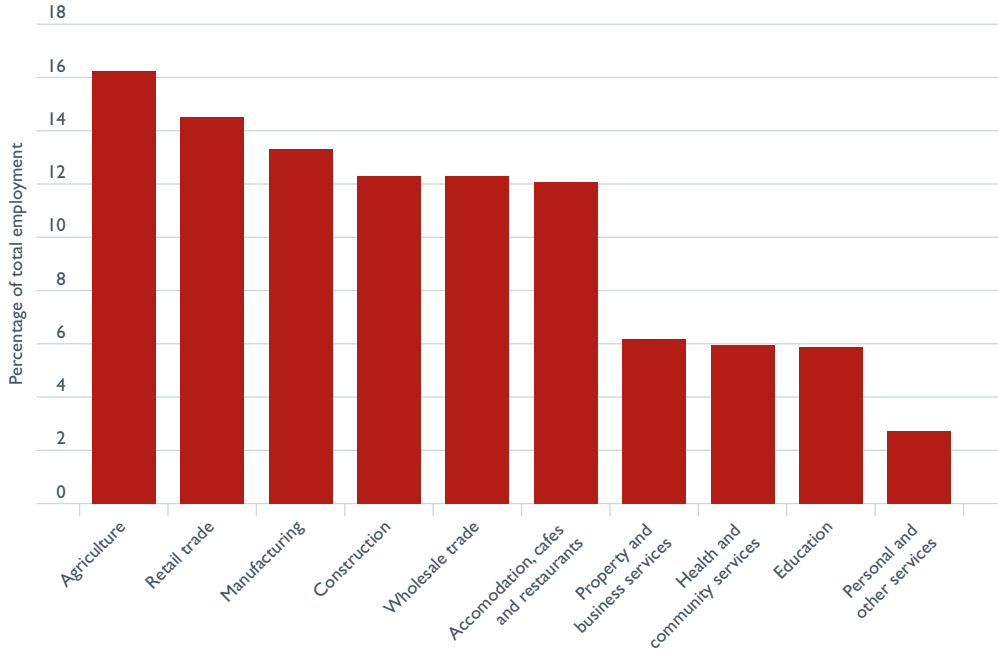
Where businesses, particularly small businesses, operate in a tourist centre an owner's income can fluctuate significantly with the number of visitors to the area. In attempting to secure visitors, owners must consider the economic and taste factors of potential customers and reinvest profits into the improvement of their business, reducing incomes. With a business ownership rate of 20 per cent, Augusta-Margaret River resembles other tourist driven regional areas, such as Noosa-Noosaville (QLD) and Hepburn East (VIC). However, the presence of a strong farm business sector suggests this is not the complete story.

As identified in Chapter 10, rural SLAs have above average holdings of business assets due to a high proportion of households operating farm businesses—Augusta-Margaret River is no exception. Along with grape production for winemaking, the region contains dairy cattle farming and grain, sheep and beef cattle farming, which provide more than 16 per cent of the SLA's employment (see Figure 11.3). Although the industry employs a large proportion of workers, many jobs are unskilled and seasonal, particularly in relation to fruit growing, resulting in relatively low wages being paid.

For the owners themselves, the nature of farming means that incomes can vary considerably from year to year depending on harvests and prices fetched in the marketplace. Returns may also be partially reinvested into the business. The business ownership rate of 20 per cent is not as high as other low income and high wealth rural SLAs, such as Wakool or Jerilderie in NSW, and so only goes part way to explaining the divergence between the income and wealth measures.

The National Sea Change Taskforce (2005 p. 6) identified Augusta-Margaret River as a sea change community, describing it as a 'coastal hamlet…with small settlements and groupings of settlements located more than three hours from a capital city'. An influx of affluent sea changers moving to the area seeking housing has meant that, for the 2003–04 financial year, average house prices rose by nearly $88 000 or 41 per cent over the previous financial year, compared to the 5 per cent average annual increase in prices over the previous 10 years (see Figure 11.4). If the ownership rate remained unchanged, this would have led to an increase in owner-occupied property wealth of $60 000 that year. This dramatic increase in the value of property has been the main driver of growth in average household wealth.

Figure 11.3 Top 10 employing industries, Augusta-Margaret River, 2006



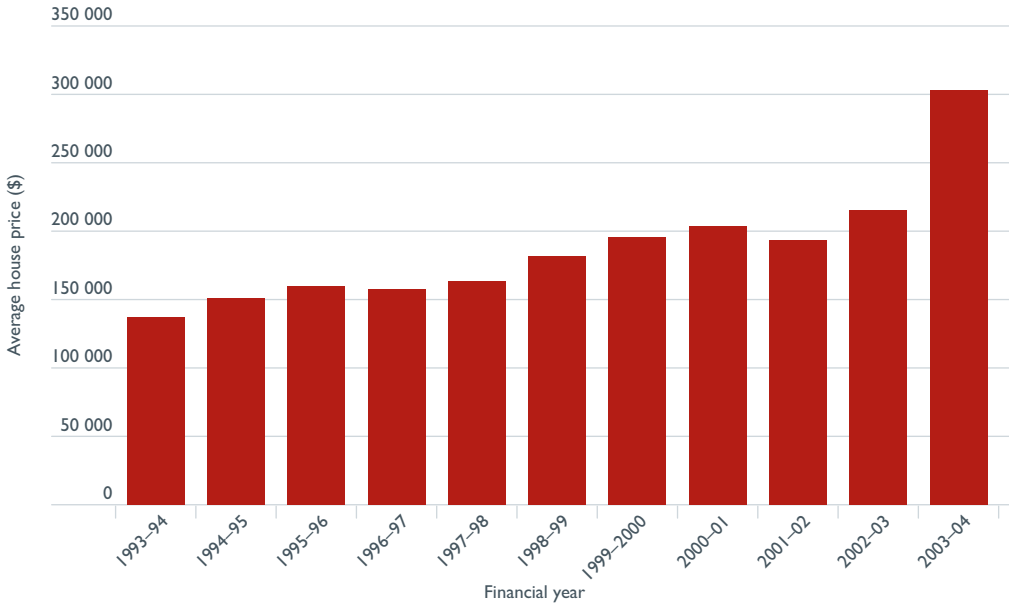
Source: BITRE *Industry Structure Database*, 2008 update (forthcoming).

Sea change migration to Augusta-Margaret River is anticipated to continue in coming years due to potential future land releases and the number of houses currently under construction (Margaret River First National Real Estate, pers comm, 30/5/2006).

Table 11.1 suggests the income gap between Augusta-Margaret River and Australia has narrowed between 2001 and 2006, from 15 per cent to 10 per cent. Although sea change migrants are often willing to accept reduced incomes in return for flexibility in lifestyle and working arrangements, in-migration appears to be pushing regional incomes upwards.

There is no doubt that increased demand for housing in the region has had the greatest impact recently on the household wealth of the Augusta-Margaret River SLA. While wealth is currently 16 per cent above the national average, it is likely that this is a relatively recent occurrence and that the region's average wealth was similar to or even below the national average in the not too distant past. The high proportion of owner-operated farm, winery and tourism businesses also contribute to the region's high wealth. Low incomes in the region are a product of the region's economic structure, which is based on tourism and agriculture and utilises large amounts of unskilled labour. Incomes have risen strongly in recent years, and the region is catching up to national average incomes. Augusta-Margaret River appears to be at a point of transformation from a rural area, typically characterised by low income and high wealth, to that of an affluent sea change region in the model of Byron or Colac-Otway.

Figure 11.4 Average house prices, Augusta-Margaret River, 1993–94 to 2003–04



Source: APM house price statistics.

Gladstone

The Gladstone SLA, on the central coast of Queensland, had a population of approximately 29 500 in 2003–04. Gladstone enjoys a relatively high income compared to Australia, yet it fails to achieve high levels of household wealth (Table 11.2). Gladstone households have low asset holdings (Table 11.3), but the debt-to-asset ratio at 20 per cent is well above the national average of 13 per cent.

Table 11.2 Wealth and income, Gladstone and Australia

Indicator ($)	*Gladstone*	*Australia*
Net worth per household 2003–04	274 900	467 600
Median weekly household income 2001	876	782
Median weekly household income 2006	1 189	1 027
Income per taxpayer 2003–04	46 833	43 050

Source: BITRE *Household Wealth Database*, BITRE *Taxable Income Database*, ABS *Census of Population and Housing* 2001 and 2006.

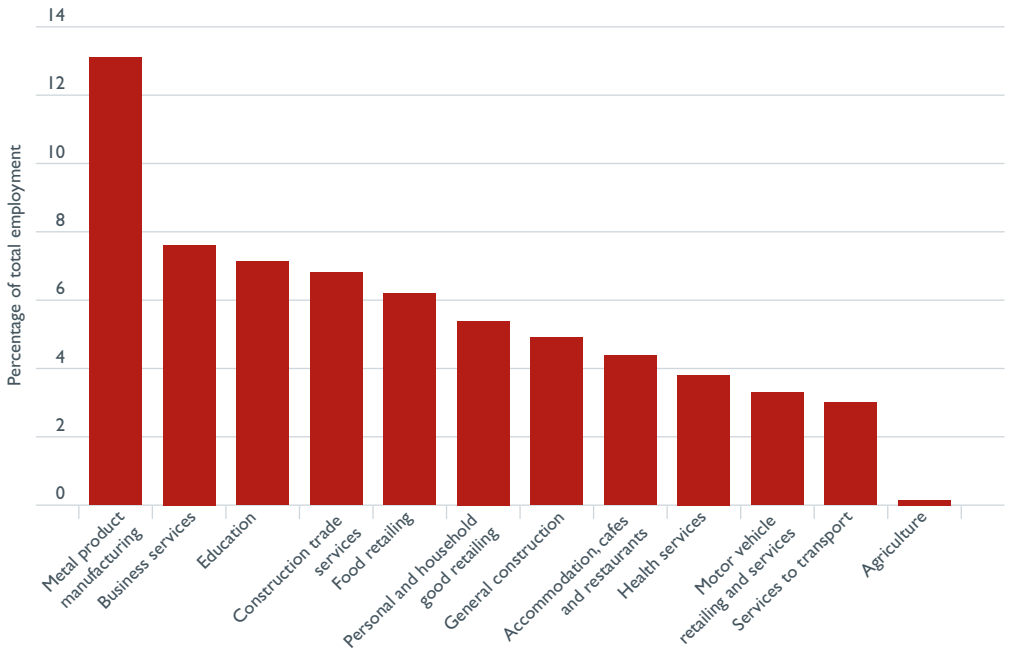
Table 11.3 Selected wealth components, Gladstone and Australia, 2003–04

Indicator	*Average per household ($ thousands)*		*Average per contributing household ($ thousands)*	
	Gladstone	*Australia*	*Gladstone*	*Australia*
Shares and trusts	16	27	57	81
Owner-occupied property assets	126	250	195	356
Other property assets	55	71	287	375
Net business assets	13	38	177	362
Outstanding balance on owner-occupied property loans	40	40	101	122

Source: BITRE *Household Wealth Database*,

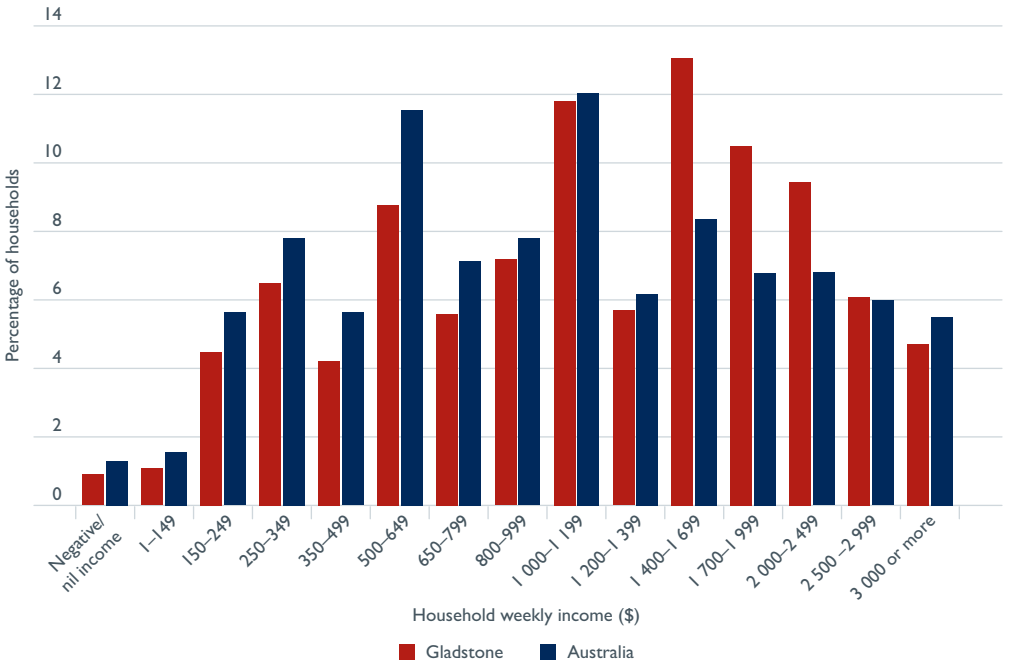
The high level of income in Gladstone can be attributed to the fact that a significant part of the population is employed in the metal manufacturing sector (Figure 11.5), while the relatively low reliance on income support payments also contributes (BITRE forthcoming). The local manufacturing, construction and transport sectors offer very good salaries and the large number of people involved in these sectors pushes Gladstone's average income upwards. A relatively high proportion of Gladstone households earn between $1400 and $2500 per week (Figure 11.6).

Figure 11.5 Employment in selected industries, Gladstone, 2006



Source: BITRE *Industry Structure Database*, 2008 update (forthcoming).

Figure 11.6 Distribution of weekly household income, Gladstone and Australia, 2006



Source: ABS *Census of Population and Housing* 2006.

Population growth has been very strong this decade for Gladstone, outpacing growth in Queensland and Australia (ABS 2007a). Gladstone has experienced high levels of inward migration, with 2006 census data indicating that around 29 per cent of the current population have moved there within the past five years. Large numbers of jobs have been created in manufacturing and construction this decade in Gladstone.

BITRE's *Cost of Remoteness* study indicates that the cost of living is about 4 per cent less than the capital city average in Gladstone—groceries are more expensive than in the capital cities, but housing costs are very low. Similarly, Queensland's Office of Economic and Statistical Research (2006) reports that Gladstone has a lower cost of living than Brisbane, largely because of the lower cost of housing. This low cost of living makes the high incomes on offer in the Gladstone region an even more attractive proposition for potential migrants.

Gladstone has only half the national average value of owner-occupied property assets. This is the single most important factor underlying Gladstone's low wealth. In 2003–04, Gladstone's home ownership rate was only slightly below the national average but property prices were just 55 per cent of the Australian average. It is interesting to note that the rate of growth of house prices has been similar to the national rate despite the considerable inward migration. The inward migration has been offset to a significant degree by the level of outward migration that Gladstone has experienced at the same time, thereby reducing the overall effect on the housing market. It appears the rental market has been more affected by migration. A comparison of the weekly rental expense in Bundaberg (comparable in size and location) and Gladstone reveals a greater proportion of rentals in the higher expense brackets in Gladstone. Growth in median rent in Gladstone outpaced national growth between 2001 and 2006, according to ABS census data.

Gladstone has low average holdings of other property assets and share and trust assets compared to the Australian benchmark. The latter result is to be expected due to the lower median age of Gladstone's population (32 years in 2006 compared to 37 nationally) and the fact that younger age groups have lower average holdings of liquid assets (see Chapter 4).

The relatively young age structure of Gladstone also has implications for its liabilities, and specifically for mortgages on owner-occupied property. A high proportion of Gladstone households have an outstanding mortgage on their home (40 per cent versus 33 per cent nationally). Gladstone households with a mortgage owe an average of more than half the property value, compared to 34 per cent for Australia. Due to the region's low median age, it is likely that most mortgage agreements have been entered into fairly recently and as a consequence, a reasonably small proportion of the principal has been repaid.

The low value of business assets also makes a contribution to Gladstone's low household wealth. Only a small proportion of Gladstone households own business assets due to the very small portion of the local population employed in agriculture (Figure 11.5) and the small numbers of self- employed in the region.

Ultimately, it is the characteristics of Gladstone that have led to this high income and low wealth result. Gladstone's youthful population have not yet had the opportunity to establish a large asset base, nor the time to substantially reduce their mortgage obligations. Like most mid-sized cities in outer regional Australia, house prices are low.

Can Gladstone transform itself from this high income and low wealth scenario? For Gladstone to become a region with high income and high household wealth, it will need to retain a much larger proportion of its workforce as they age. Currently people are migrating to Gladstone to earn the high salaries that are available in the manufacturing and construction sectors, but then after a certain period of time are migrating away from Gladstone, and taking any accumulated wealth with them. Gladstone is positioning itself as a location for further industrial development (Gladstone Economic and Industry Development Board nd). Its population is continuing to grow, which will increase demand for housing and house prices should appreciate accordingly. If the growth is sustained, it is quite likely that the average value of owner-occupied property assets will begin to catch up to the national average.

Recently, the closure of the Stuart Oil Shale Project exhibited the resilience of the local economy to a significant change. However, the low household wealth, substantial debt and transience of the local population suggest the Gladstone economy may be somewhat vulnerable to a major economic shock.

Key messages

BITRE's *Household Wealth Database* at <wwwbitre.gov.au> contains the 2003–04 estimates of household wealth by region.

Increased wealth was one of several factors that contributed to the economic upturn in Tasmania early this decade. A sharp rise in house prices caused a large increase in wealth, and this in turn substantially boosted the consumption of Tasmanian households.

Augusta-Margaret River has low incomes but high wealth. Recently, property values have risen dramatically, driving wealth upwards. Large numbers of owner operated businesses also contribute to the region's high wealth. The region appears to be at a point of transformation from a rural area to an affluent sea change region.

Gladstone has high incomes and low wealth. The low wealth is due to the region's youthful age structure and low house prices. Incomes are high in Gladstone because of the concentration of employment in the high paying metal manufacturing industry.

The case studies illustrate how the *Household Wealth Database* can be used to profile a region's wealth and wellbeing or to help understand processes of regional economic growth.

Chapter 12 Conclusion

> 'Beyond income, wealth is also an important measure of economic well-being, because while income captures the current state of inequality, wealth has the potential for examining accumulated and historically structured inequality' (Denton and Boos 2007 p. 3).

This study set out to measure and analyse this important component of wellbeing—wealth—at a regional scale. New regional estimates of net worth per household have been developed using small area estimation techniques. These estimates have been used to describe the spatial distribution of household wealth, and some of its key components, and reveal considerable variation in wealth across Australia's regions. This newly available information on household assets and liabilities will enable more informed analysis of the economic strengths and needs of regions, providing a better basis for decisions.

This represents BITRE's first foray into the field of small area estimation. Small area estimation techniques proved to be an effective means of developing new regional estimates of household wealth, due to the availability of a range of highly relevant small area auxiliary data sources. More generally, small area estimation techniques would appear to have some potential for improving the availability of regional statistics in Australia and filling some of the existing information gaps. The potential would appear to be greatest for topics for which existing administrative and census data is available (e.g. income, health, education, unemployment, community services, demographics, crime and migration).

This approach did, however, have some limitations, which have implications for the ability of small area estimation to fill the gaps in regional data availability. Estimates of wealth could not be produced for very remote areas or discrete indigenous communities, while the small area estimates were not considered to be of publishable quality for regions with fewer than 500 households. There has also been a considerable time lag between the reference period of 2003–04 and the release of the regional wealth information, which reflects both the time taken to release the ABS' SIH results and the time BITRE subsequently spent producing and analysing the small area estimates.

While the information paper focuses on providing a snapshot of household wealth in Australia's regions for 2003–04, it also highlights some recent trends in household wealth for both Australia and its regions. Subject to government priorities and feedback from users, BITRE will consider whether it updates the Household Wealth Database to provide information on changes in the wealth of regions. More broadly, the fact that repeated measures of wealth are now available from the HILDA survey means that the dynamics of wealth accumulation over time represents a fruitful area for further investigation.

Measures of average household wealth provide useful insights into spatial differences in economic wellbeing and living standards, but a high level of average wealth in a region can mask considerable variation. It is not unusual for wealth to

be highly concentrated within a relatively small number of households, which may make regional averages unrepresentative of the financial situation of the bulk of the population. A valuable extension of this research would involve complementing the information on average wealth in a region with information on the distribution of wealth across different types of households within that region.

The study also investigated the relationship between regional income and regional wealth, finding that income information in itself does not provide an adequate picture of regional economic wellbeing. Like Wolff and Zacharias (2007, p. 83), we conclude that:

> 'Wealth and income are not interchangeable as indicators of economic status or wellbeing. Rather, wealth is an additional measure of economic wellbeing, over and above income.'

Focusing on a single measure of regional economic wellbeing, such as income, has obvious benefits in terms of simplicity. However, such an approach can provide misleading messages about the comparative economic wellbeing of regions. For example, many low income regions have significant wealth holdings which enable residents to enjoy a relatively high standard of living. This paper and its accompanying database are intended to complement BITRE's *Taxable Income* information paper and database—together the two provide a more comprehensive picture of regional economic wellbeing which reflects both income and wealth.

This paper has also presented evidence about the connection between wealth and other important aspects of wellbeing, namely consumption, economic security and socioeconomic disadvantage. A related paper by Johnson, Williams and Frost (2008) explores the nature of the relationship between wealth, income and the cost of living. In so doing, it highlights the value of undertaking a more integrated and multidimensional assessment, which takes into account spatial differences in various aspects of economic wellbeing. Future BITRE research will consider extending this multidimensional approach to incorporate regional information on other important facets of economic wellbeing, such as poverty, welfare dependency, inequality, consumption and economic insecurity.

Appendix A: Illustrations of small area estimation methodology

Owner-occupied property assets

The ABS 2003–04 SIH reveals the average Australian household owns $249 000 of owner-occupied property. This estimate comes from a question asked of home owners 'What is your estimate of the sale price of this dwelling if you sold it tomorrow?' In theory, properties owned by a respondent's business are excluded (ABS 2006b). However, in practice the value of farm dwellings and the home paddock are generally treated as owner-occupied property assets (ABS, pers. comm., 20/10/2006).

By definition, multiplication of the average property value by the home ownership rate produces the SIH estimate of average owner-occupied property assets per household.

An alternative estimate of the average value of owner-occupied property can be obtained from our small area data sources by multiplying the average sales price from the APM data by the census home ownership rate for 2001. The formula below distinguishes separate houses from flats and semi-detached dwellings in estimating the value of owner-occupied property assets. The small area data sources give us an estimate of $236 100—this is about 5 per cent lower than the SIH figure.

Using the small area data sources, the value of owner-occupied property assets can be calculated using the following formula.

Estimated value of owner-occupied property assets

= average property sales price X (owner-occupied dwellings/all dwellings)

= average value of owner-occupied separate houses X
(owner occupied houses/all dwellings)
+
average value of owner-occupied flats and semi-detached dwellings X
(owner-occupied flats and semi-detached dwellings/all dwellings)

= $342 600 (APM 2003–04) X 61.5 per cent (census 2001)
+ $327 300 (APM 2003–04) X 7.8 per cent (census 2001)

= $210 700 + $25 400

= $236 100

Both estimates are attempting to capture the same concept: the average value of owner-occupied property assets per household. One does so using actual transaction price data, the other using subjective estimates of the property's value.

It is not surprising the two estimates are somewhat different, as the data sources are completely different. The census data relates to 2001, so one possible explanation for the gap would be a change in home ownership rates since 2001. In fact, home ownership rates have remained basically unchanged at the national scale. Instead, the reason for the divergence between the two estimates is that respondents to the SIH placed a higher value on their homes than the APM sales data suggests they should. It is possible the APM data may not be representative of the price of owner-occupied dwellings, as it does include investment property and holiday homes as well as owner-occupied property. On the other hand, the SIH data is inherently subjective and could be upwardly biased because people want to think their house is worth more than it actually is. A further potential difference relates to the inclusion of the value of farm dwellings and the home paddock in the SIH estimate, while these are systematically excluded from the APM data. The SIH and auxiliary data sources do appear to be better aligned in the capital cities than in their respective state balances, which may be a consequence of this difference in the coverage of the SIH and APM data.

Like most sample surveys, the SIH excludes very remote areas and indigenous communities from its scope. To bring the SIH and APM data on to a common footing, the APM data was adjusted to exclude the 89 SLAs which are predominantly very remote. The APM data is on an ASGC 2005 basis, while the census data reflect ASGC 2001 boundaries, so concordances were applied to the APM data so it reflected 2001 boundaries.

Figure A1 plots the SIH estimates for each capital city and state balance category against BITRE's estimates which were developed by applying the above formula to the auxiliary data sources (APM sales price data and census home ownership rates) at the small area scale and then summing to the capital city and state balance scale. The estimates produced from the auxiliary data are extremely highly correlated with the benchmark SIH measures. The overall correlation is 98 per cent. It is clear from this that the two different approaches are capturing the same concept, just using different data sources.

Overall, the small area data sources are very closely aligned with the SIH estimates on both a conceptual and empirical basis. Both methods show that Sydney has by far the highest average value of owner-occupied property assets, with Melbourne and the ACT very closely matched in second and third place. Both methods also show that Tasmania Balance, WA Balance and the NT have the lowest average values. The major difference between the two sets of estimates occurs for the NT, where the SIH estimate is much higher than the estimate derived from the auxiliary data sources.

Small area estimates of owner-occupied property assets were derived from the APM and census data using the previous formula. The small area estimates were benchmarked to ensure they summed to the capital city and state balance totals from the SIH:

$$\text{Owner-occupied property assets per household}_i = X_i * (Y_B / (\text{sum}_{i=1,b} X_i))$$

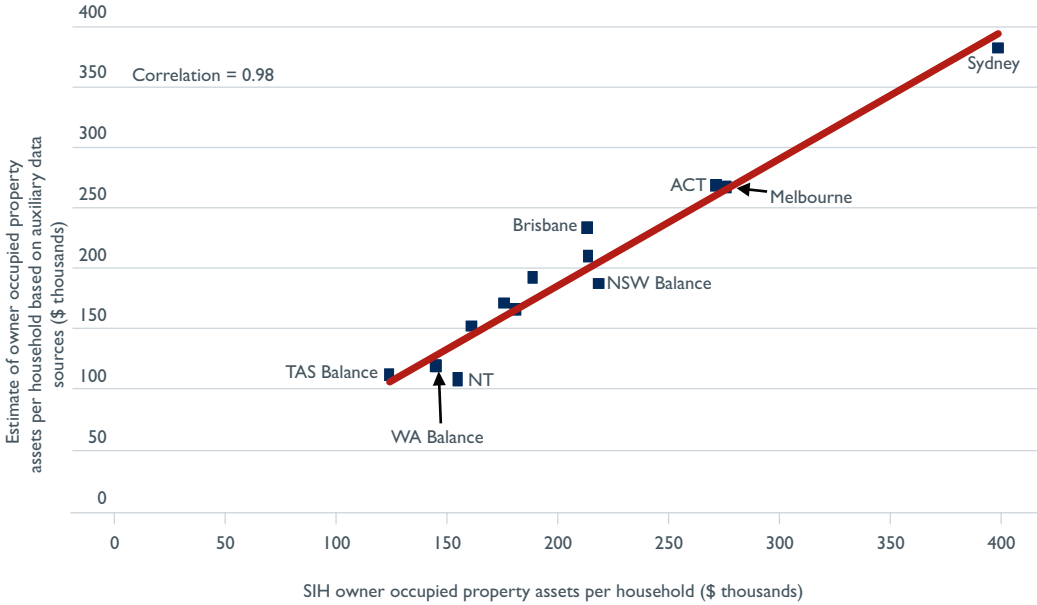
where: i = small area i, which is located within broad area B
b = number of small areas within broad area B

X_i = Initial estimate of average owner-occupied property assets in small area i derived using small area data sources (based on previous formula)

Y_B = Estimate of average owner-occupied property assets for broad area B derived from SIH

This estimation technique can be described as BARE with auxiliary data, where the auxiliary data is small area information on the value of the asset.

Figure A1 Linking SIH and small area data for owner-occupied property assets, capital cities and state balances, 2003–04



Source: ABS SIH 2003–04 and BITRE estimates based on ABS 2001 *Census of Population and Housing* and APM property sales price data for 2003–04.

This approach involves a number of assumptions. For example, it assumes the APM sales data for separate houses (flats and semi-detached dwellings) is representative of the value of the stock of owner-occupied housing assets (flats and semi-detached dwellings) in each small area. It also assumes that changes in the home ownership rate since 2001 have been similar within each capital city and state balance category.

Another issue is how far should we drill down: is the auxiliary data capable of producing reliable estimates at the SLA scale or only at a more aggregated scale? The home ownership data is census data and so should be considered comprehensive and reliable at the SLA scale. The APM sales price data covers residential property sales in an area in any given period. However, only a small proportion of the dwelling stock is subject to a transfer of ownership in any period, and the APM data can be sparse in smaller SLAs. For geographic areas where few properties changed hands in any period, the APM average price estimate may be heavily influenced by one or two atypical sales and so not be representative of the average property value in the area.

For SLAs in which there were 10 or less house sales (or 5 or less unit sales), estimates were imputed based on the census home ownership data for the SLA and average APM sales price data for the SSD to which the SLA belongs.

The overall assessment was that the auxiliary data sources produced reliable estimates of owner-occupied property assets for the in-scope SLAs with more than

500 households. The discrepancy between the SIH and auxiliary data sources for the NT should be kept in mind when using estimates of owner-occupied property assets for NT SLAs.

Interest earning assets

The ABS 2003–04 SIH reports that the average Australian household held $21 100 in accounts with financial institutions. However, according to the SIH, only 68 per cent of Australian households held assets in this form—the average for households with bank accounts was a much higher $31 000. In contrast, HILDA more plausibly estimates that 97 per cent of Australian households own bank accounts.

Discussions with ABS have revealed that the wording of the SIH question may have contributed to underreporting. The SIH question asks 'do you currently have any of these financial investments' to which one of the available responses is 'deposits at a bank or other financial institution (including savings accounts, cheque accounts, term deposit accounts, etc)'. People who habitually maintain very low balances in their everyday account may not have considered it as a 'financial investment'. In recognition of this issue, the 2005–06 SIH wording was revised to specifically list 'everyday accounts' as one of the options. Thus, it is likely that households with significant account balances will generally have reported them in the SIH, but many households with low balances would have failed to report them.

The SIH also collects data on another form of interest earning asset, debentures and bonds. On average, each Australian household owned only $900 of debentures and bonds. Only 1.7 per cent of households owned any debentures or bonds, but those households which did, owned an average of $54 800 of debentures and bonds.

The SIH can only provide estimates of interest earning assets down to the capital city and state balance scale. The ATO's *Taxation Statistics* provides small area data on gross interest earnings at the postcode scale, which has been converted to ASGC 2001 geography using population-weighted concordances. The ATO's gross interest data includes assessable interest income received by individual taxpayers from any Australian source, such as interest earned from financial institution accounts, term deposits or the ATO itself. While not everyone submits a tax return, and some of those who submit the tax return will not fully report interest earnings, the ATO measure is likely to be more reliable than other income sources because:

- the information is collected under government legislation where there are significant penalties for inaccuracy and the ATO has an objective to ensure compliance
- taxpayers are assisted by professional accountants to accurately compute and report income based on documentary evidence.

Conceptually, it would be expected that the average amount of interest earnings within a region would be closely related to the average value of interest earning assets in the region (i.e. the interest rate should not vary much across regions). If this relationship is statistically strong at the capital city and state balance scale, then this would provide a basis for allocating the benchmark SIH estimates of interest earning assets down to the small area scale using the ATO gross interest earnings data.

Both the SIH and ATO data are available for the 2003–04 financial year. The ATO data was adjusted to exclude very remote SLAs to bring it on to a common basis to the SIH.

Figure A2 shows the correlation between the ATO gross interest earnings data and the SIH interest earning assets data at the capital city and state balance scale. The estimates produced from the small area data are quite highly correlated with the SIH benchmarks. The overall correlation is 77 per cent and the two data sources appear to be capturing a related concept. Both methods show that Sydney has the highest average value and NT the lowest.

The relationship between the SIH and ATO data implies that the average interest rate earnt was about 4.7 per cent for 2003–04.[61] This is in accordance with expectations.[62] The ATO data is well aligned with the SIH estimates on both a conceptual and empirical basis. The ATO data was therefore used to produce small area estimates of interest earning assets. The adopted small area estimation technique can be described as BARE with auxiliary data, where the auxiliary data was information on income flows generated by the asset. The standard BARE with auxiliary data method was modified to reflect the fact that small bank balances earn zero interest, and so bank account assets are only proportional to income flows above a certain minimum amount.[63]

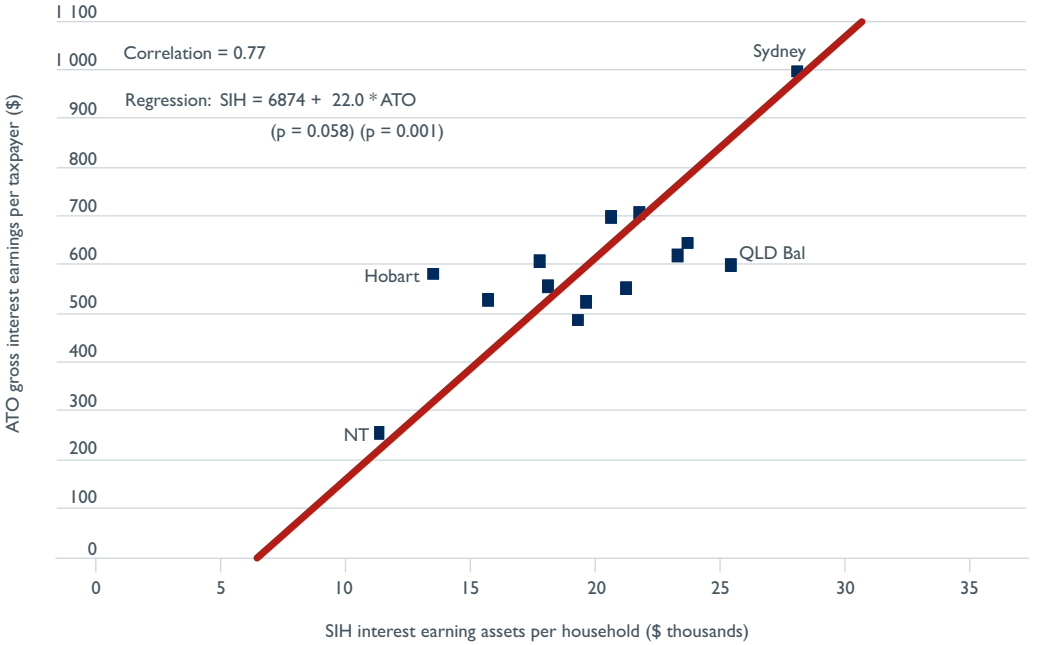
The SLA estimates of interest earning assets were developed using the following steps:

- The formula in Figure A2 was used to convert ATO gross interest earnings data into a first-cut estimate of interest earning assets for each in-scope SLA. The application of this formula meant that the minimum first cut estimate for any SLA was $6874 of interest earning assets (for SLAs in which interest earnings were zero).
- For SLAs in which there were 10 or less taxpayers with interest earnings, estimates were imputed based on the average interest earnings figure for the SSD to which the SLA belonged (failing that, the capital city or state balance average).[64]
- SLA data was aggregated to the capital city and state balance scale, using estimates of the number of households in each SLA. A benchmark ratio was derived for each capital city and state balance category.[65] The first-cut estimate of interest earning assets per household for each in-scope SLA was multiplied by the relevant benchmark ratio to provide a final estimate of the average value of interest earning assets for each in-scope SLA.

This approach involves a number of assumptions. Most importantly, it assumes that the relationship between average interest earnings and average interest earning assets (i.e. the interest rate and the average asset value at which interest begins to be earned) is fixed within each capital city and state balance category.

61. This was estimated via a regression across the 14 capital city and state balance categories in which both the SIH and ATO data were expressed on a consistent aggregate basis.
62. According to the RBA, in January 2004 a bank bonus savings account with a minimum balance of $10 000 earned an interest rate of 3.0 per cent, a 6 month term deposit with a minimum balance of $10 000 earned 3.85 per cent, an online savings account with a minimum balance of $10 000 earned 5.1 per cent and a 3 year government bond earned 5.57 per cent. The 4.7 per cent estimate is therefore plausible.
63. The standard approach was also trialled, and produced estimates which were very highly correlated with the preferred approach (0.98), but showed more extreme values.
64. Average interest earnings needed to be imputed for only 13 of the in-scope SLAs.
65. The gap between the benchmark and small area estimates was greatest for Hobart.

Figure A2 Linking SIH and small area data for interest earning assets, capital cities and state balances, 2003–04



Note: Interest earning assets include bank accounts, debentures and bonds.
Source: ABS SIH 2003–04 and ATO *Taxation Statistics* data on gross interest earnings for 2003–04.

There are a number of ways to look at the reliability of the small area data:

- Some SLAs have very small populations and few taxpayers. This increases the likelihood there will be no interest earnings within the region, or that the average could be heavily influenced by one or two taxpayers.
- ATO-based estimates of average interest earnings per taxpayer can vary considerably from one year to the next for some SLAs. It is primarily the smaller SLAs which show excessive variability over time.

The overall assessment was that the auxiliary data sources produced reliable estimates of interest earning assets for the in-scope SLAs with more than 500 households. The discrepancy between the SIH and auxiliary data sources for Hobart should be kept in mind when using estimates of interest earning assets per household for Hobart SLAs.

The small area estimates of interest earning assets should be regarded as being of somewhat lesser quality than the small area estimates of owner-occupied property assets, due to the lesser relevance of the auxiliary data, which relates to income flows generated by the asset, rather than the actual value of the asset.

BITRE's small area estimates of share and trust assets, other property assets and HECS debt are also based on ATO *Taxation Statistics* data, and adopt a methodology that parallels that used for interest earning assets.

Appendix B: Benchmark ratios

Table B1 Benchmark ratios by published wealth component and capital city or state balance, 2003–04

Benchmark ratios	*Sydney*	*NSW balance*	*Melbourne*	*VIC balance*	*Brisbane*	*QLD balance*	*ACT*
Interest earning assets	0.99	0.92	0.97	0.88	0.85	1.25	1.12
Shares and trusts	0.95	1.03	1.28	0.96	1.07	1.35	0.83
Superannuation	1.09	1.03	1.11	1.18	1.11	0.94	0.89
Net business assets	1.30	1.06	0.85	1.31	0.86	0.65	0.51
Owner-occupied property assets	1.04	1.17	1.03	1.06	0.91	1.03	1.01
Outstanding loans on owner-occupied property	1.10	0.99	0.98	0.91	0.93	1.09	0.90
Net other property assets	1.15	0.91	1.22	1.23	1.13	0.86	1.05
Dwelling contents	1.04	1.14	0.98	0.96	0.90	0.90	1.33
Net vehicle assets	0.93	0.96	1.00	0.97	0.91	0.96	0.95
Net worth	1.06	1.09	1.06	1.11	0.96	0.95	1.01

Benchmark ratios	*Adelaide*	*SA balance*	*Perth*	*WA balance*	*Hobart*	*TAS balance*	*NT*
Interest earning assets	0.96	1.13	1.12	1.05	0.70	1.10	0.91
Shares and trusts	0.90	0.96	1.01	2.06	0.85	0.46	1.17
Superannuation	0.91	0.95	0.91	0.94	1.07	0.91	1.02
Net business assets	0.86	1.10	0.94	0.97	1.15	0.78	1.23
Owner-occupied property assets	0.98	1.22	1.02	1.22	1.09	1.11	1.42
Outstanding loans on owner-occupied property	0.99	1.05	0.86	0.97	1.03	0.80	1.12
Net other property assets	0.81	0.93	0.89	1.10	1.09	0.95	0.78
Dwelling contents	1.04	1.03	0.88	0.93	1.17	1.11	0.87
Net vehicle assets	1.01	0.97	0.96	1.09	1.04	1.02	1.20
Net worth	0.95	1.09	0.98	1.11	1.08	1.01	1.22

Notes: Benchmark ratios are calculated by dividing the relevant SIH estimate by BITRE's unbenchmarked small area estimate of the wealth component for the capital city or state balance region.

Source: BITRE analysis.

Appendix C Regions with consistently very high or very low wealth and income

Table C1 SLAs with very high wealth and income, 2003–04

SLA	Wealth rank	ATO Income rank	ABS Income rank
Peppermint Grove WA	1	4	5
Hunter's Hill NSW	2	3	16
Woollahra NSW	3	2	13
Mosman NSW	4	1	10
Ku-ring-gai NSW	5	6	4
Bayside: Brighton VIC	6	8	54
Pittwater NSW	7	43	72
Manly NSW	8	23	38
Nedlands WA	9	7	70
Willoughby NSW	10	18	29
Chelmer QLD	11	66	68
Cottesloe WA	12	5	97
Boroondara: Camberwell North VIC	13	30	96
Lane Cove NSW	14	17	26
Stonnington: Malvern VIC	16	16	100
Red Hill ACT	17	11	44
Fig Tree Pocket QLD	18	31	11
Manningham East VIC	20	56	22
Boroondara: Kew VIC	21	20	70
Sutherland Shire East NSW	22	94	171
Concord NSW	23	98	93
Yarralumla ACT	24	25	25
Boroondara: Camberwell South VIC	25	27	54
Brookfield (including Mt Coot-tha) QLD	26	33	1
Deakin ACT	29	25	38
Kogarah NSW	30	180	187
Drummoyne NSW	31	46	82
Pullenvale QLD	32	35	8
Warringah NSW	33	88	111
Bayside South VIC	34	53	198
Baulkham Hills NSW	35	92	15
Isaacs ACT	41	83	19
Hornsby NSW	43	80	49
Hamilton QLD	44	13	195
Kenmore Hills QLD	45	33	27
Sutherland Shire West NSW	46	176	43
Waverley NSW	48	29	127
Stonnington: Prahran VIC	52	9	170
Mount Ommaney QLDS	54	218	7
Chapman ACT	55	150	6
Manningham West VIC	58	205	165
Griffith ACT	59	19	97
Main Beach-Broadwater QLD	60	164	169
Boroondara: Hawthorn VIC	61	22	154
Cambridge WA	62	40	118

(continued)

Table C1 SLAs with very high wealth and income, 2003–04 (continued)

SLA	*Wealth rank*	*ATO Income rank*	*ABS Income rank*
Randwick NSW	63	117	183
Weetangera ACT	66	132	21
North Sydney NSW	67	10	17
Campbell ACT	68	100	45
Garran ACT	70	63	35
Farrer ACT	75	83	75
Ryde NSW	78	158	182
Chapel Hill QLD	81	36	14
Bridgeman Downs QLD	82	166	20
Fadden ACT	83	161	2
Port Phillip West VIC	84	21	113
Nillumbik South VIC	85	126	40
Belmont-Mackenzie QLD	86	157	60
Burnside South West SA	90	52	224
Curtin ACT	99	62	133
Kenmore QLD	100	31	124
Aranda ACT	104	134	62
Hope Island QLD	105	184	217
Bardon QLD	106	59	92
Hughes ACT	109	63	174
Westlake QLD	111	220	18
Pine Rivers Balance QLD	112	215	77
Hawker ACT	115	134	129
Torrens ACT	117	87	137
Yarrowlumla Part A NSW	121	177	63
Moggill QLD	128	154	59
Leichhardt NSW	130	28	83
Pearce ACT	132	83	193
Stirling ACT	137	152	72
Nicholls ACT	145	182	9
Hawthorne QLD	148	71	172
Balmoral QLD	155	71	198
The Gap (including Enoggera Reserve) QLD	165	145	80
Bulimba QLD	170	73	224
Hackett ACT	177	168	157
Graceville QLD	178	138	145
Cook ACT	187	132	150
Holder ACT	197	146	136
Ashgrove QLD	210	109	200
Weston ACT	213	150	144
O'Connor ACT	219	142	203
Duffy ACT	225	147	91

Notes: 'Very high wealth' refers to the top wealth quintile and a comparable definition is adopted for both income measures. Only SLAs in the top quintile for wealth and both income measures are included in the table. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing* place of usual residence data.

Table C2 SLAs with very low wealth and income, 2003–04

SLA	*Wealth rank*	*ATO Income rank*	*ABS Income rank*
Mount Morgan QLD	1 135	930	1 135
Playford: West Central SA	1 134	973	1 107
Playford: Elizabeth SA	1 133	1 094	1 127
Woodridge QLD	1 132	1 130	1 060
Kingston QLD	1 131	1 131	927
Wacol QLD	1 130	931	1 035
Inala QLD	1 129	1043	1 114
Brighton TAS	1 121	923	927
Eagleby QLD	1 120	910	1 071
Port Adelaide Enfield: Port SA	1 110	1032	1 127
Waterford West QLD	1 107	953	949
Beenleigh QLD	1 104	912	975
Derwent Valley Part A TAS	1 100	968	937
Onkaparinga: North Coast SA	1 093	1 078	1 062
Herberton QLD	1 084	1 065	1 120
Warwick Central QLD	1 076	1 081	947
Caboolture Central QLD	1 070	998	984
Kentish TAS	1 062	1 100	1 041
Glenorchy TAS	1 057	1 029	988
Central Highlands TAS	1 052	1 000	1 067
Peterborough SA	1 050	1 128	1 134
Maryborough QLD	1 045	969	1 024
Greater Bendigo: Eaglehawk VIC	1 038	1 117	1 044
Cooloola: Gympie only QLD	1 034	1 002	980
Richmond Valley: Casino NSW	1 025	1 102	1 039
Glen Innes NSW	1 018	1 068	1 099
Central Goldfields: Maryborough VIC	1 014	1 106	1 113
Kolan QLD	996	1 134	1 123
Southern Midlands TAS	989	1 066	984
Huon Valley TAS	984	1 087	955
Hervey Bay Part B QLD	977	1 109	1 133
Inverell Part B NSW	976	981	974
Tasman TAS	974	1 125	1 111
Mareeba QLD	961	980	952
Murray Bridge SA	950	1 089	988
Break O'Day TAS	946	1 118	1 131
Atherton QLD	943	966	924
Biggenden QLD	941	1 085	1 127
Dorset TAS	937	1 013	932
Wondai QLD	920	1 112	1 083
Tiaro QLD	912	989	1 120

Notes: 'Very low wealth' refers to the bottom wealth quintile and a comparable definition is adopted for both income measures. Only SLAs in the bottom quintile for wealth and both income measures are included in the table. The analysis excludes SLAs with fewer than 500 households in 2003–04, very remote SLAs and discrete indigenous communities. There are 1135 remaining SLAs.

Source: BITRE analysis based on BITRE *Household Wealth Database*, BITRE *Taxable Income Database* and 2001 ABS' *Census of Population and Housing* place of usual residence data.

Abbreviations and acronyms

ABARE	Australian Bureau of Agriculture and Resource Economics
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AFS	Agricultural Finance Survey
APM	Australian Property Monitors
ASGC	Australian Standard Geographical Classification
ATO	Australian Taxation Office
Av.	Average
Bal.	Balance
BARE	Broad Area Ratio Estimator
BITRE	Bureau of Infrastructure, Transport and Regional Economics
BTRE	Bureau of Transport and Regional Economics
Cat.	Catalogue number
CURF	Confidentialised Unit Record File
DOTARS	Department of Transport and Regional Services
Equiv.	Equivalised
ERH	Estimated Resident Households
ERP	Estimated Resident Population
GDP	Gross Domestic Product
Gr.	Greater
GSP	Gross State Product
incl.	including
HECS	Higher Education Contribution Scheme
HES	Household Expenditure Survey
HILDA	Household, Income and Labour Dynamics in Australia
LGA	Local Government Area
mpc	marginal propensity to consume
Mt	Mount
na	not applicable

nd	not dated
nr	not relevant
ns	not significant
NSW	New South Wales
NT	Northern Territory
OECD	Organisation for Economic Cooperation and Development
Pers. comm.	Personal communication
QLD	Queensland
RAAF	Royal Australian Air Force
RBA	Reserve Bank of Australia
RIPT	Real income per taxpayer
RSE	Relative Standard Error
SA	South Australia
SD	Statistical Division
SEIFA	Socio-economic indexes for areas
SIH	Survey of Income and Housing
SLA	Statistical Local Area
SSD	Statistical Subdivision
stdev	Standard deviation
TAS	Tasmania
UK	United Kingdom
US	United States of America
VIC	Victoria
WA	Western Australia

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